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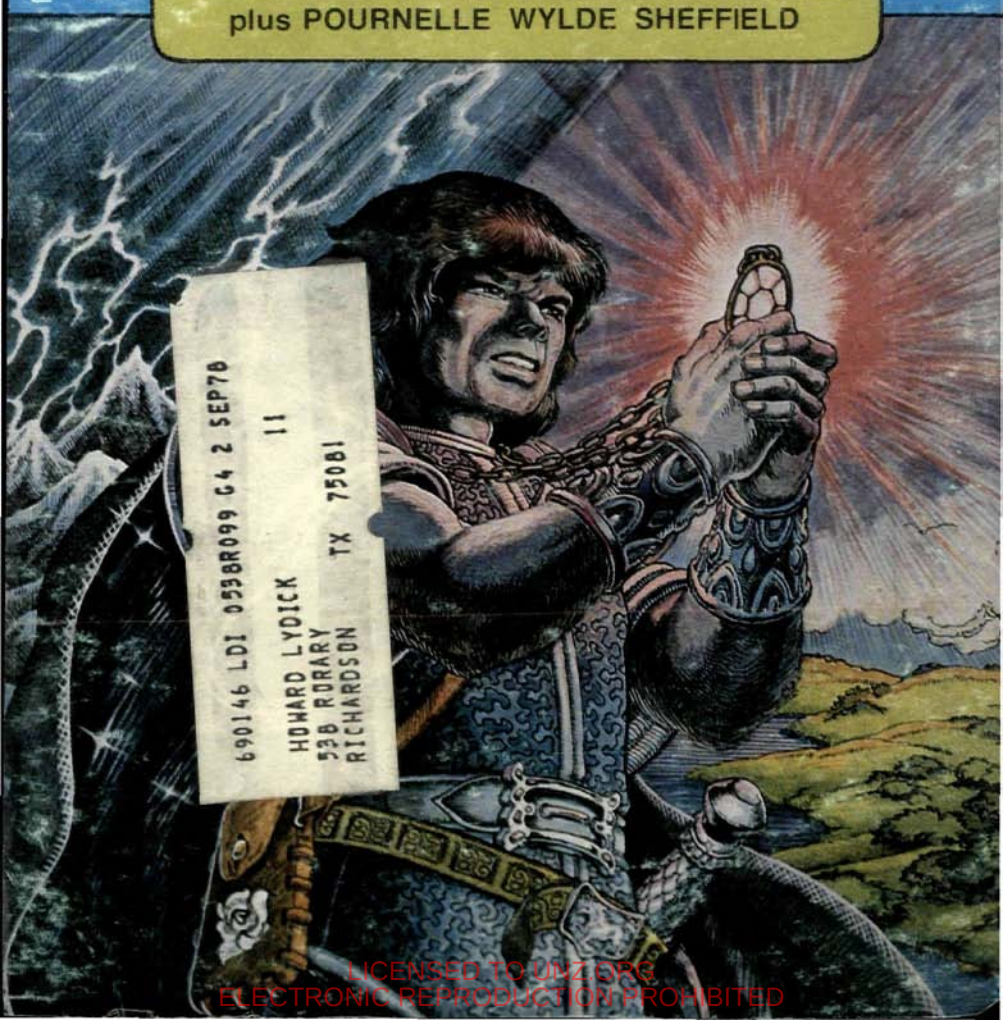

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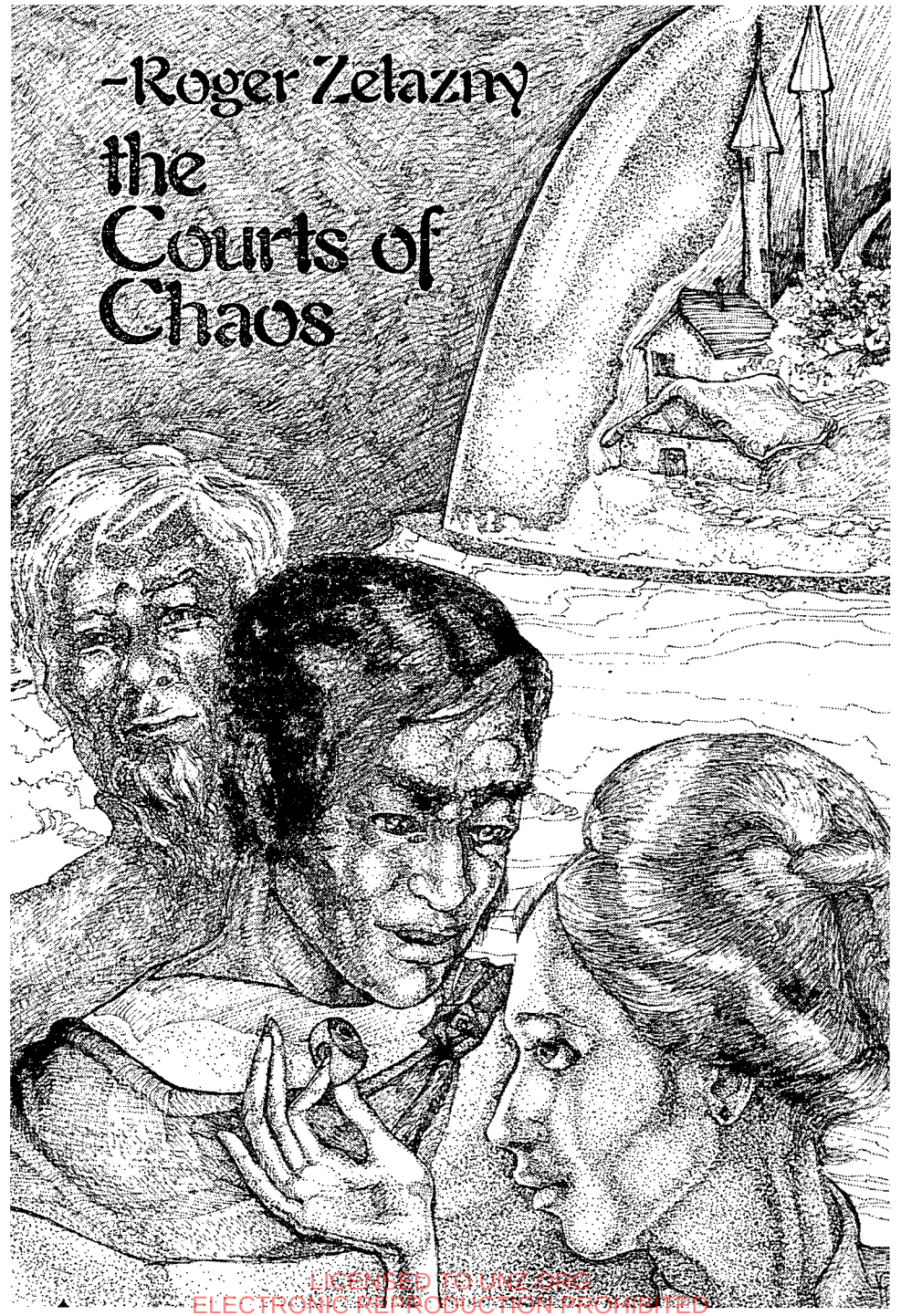

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Existence depended on the Pattern. And the Pattern was being broken. . . .

I.

AMBER: HIGH and bright atop Kolvir in the middle of the day. A black road: low and sinister through Garnath from Chaos to the south. Me: cursing, pacing and occasionally reading in the library of the palace in Amber. The door to that library: closed and barred.

The mad prince of Amber seated himself at the desk, returned his attention to the opened volume. There was a knock on the door.

"Go away!" I said.

"Corwin. It's me—Random. Open up, huh? I even brought lunch."

"Just a minute."

I got to my feet again, rounded the desk, crossed the room. Random nodded when I opened the door. He carried a tray which he took to a small table near the desk.

"Plenty of food there," I said.

"I'm hungry, too."

"So do something about it."

He did. He carved. He passed me some meat on a slab of bread. He poured wine. We seated ourselves and ate.

"I know you are still mad . . . ," he said after a time.

"Aren't you?"

"Well, maybe I am more used to it. I don't know. Still . . . . Yes. It was sort of abrupt, wasn't it?"

"Abrupt?" I took a large swallow of wine. "It is just like the old days. Worse even. I had actually come to like him when he was playing at being Ganelon. Now that he is back in control, he is just as preemptory as ever. He has given us a set of orders he has not bothered to explain and he has disappeared again."

"He said he would be in touch soon."

"I imagine he intended that last time, too."

"I'm not so sure."

"And he explained nothing about his other absence. In fact, he has not really explained anything."

"He must have his reasons."

"I am beginning to wonder, Random. Do you think his mind might finally be going?"

"He was still sharp enough to fool you."

"That was a combination of low animal cunning and shapeshifting ability."

"It worked, didn't it?"

"Yes. It worked."

"Corwin, could it be that you do not want him to have a plan that might be effective, that you do not want him to be right?"

"That is ridiculous. I want this mess cleared up as much as any of

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us."

"Yes, but wouldn't you rather the answer came from another quarter?"

"What are you getting at?"

"You do not want to trust him."

"I will admit that. I have not seen him—as himself—in a hell of a long time, and—"

He shook his head.

"That is not what I mean. You are angry that he is back, aren't you? You hoped that we had seen the last of him."

I looked away.

"There is that," I finally said. "But not for a vacant throne, or not *just* for it. It is him, Random. Him. That's all."

"I know," he said. "But you have to admit he suckered Brand, which is not an easy thing to do. He pulled a stunt I still do not understand, getting you to bring that arm back from Tir-na Nog'th, somehow getting me to pass it along to Benedict, seeing to it that Benedict was in the right place at the proper moment so that everything worked and he got the Jewel back. He is also still better than we are at Shadow play. He managed it right on Kolvir when he took us to the primal Pattern. I cannot do that. Neither can you. And he was able to whip Gérard. I do not believe that he is slowing down. I think he knows exactly what he is doing, and whether we like it or not, I think he is the only one who can deal with the present situation."

"You are trying to say that I should trust him?"

"I am trying to say that you have no choice."

I sighed.

"I guess you've put your finger on it," I said. "No sense in my being bitter. Still . . . ."

"The attack order bothers you, doesn't it?"

"Yes, among other things. If we would wait longer, Benedict could field a greater force. Three days is not much time to get ready for something like this. Not when we are so uncertain about the enemy."

"But we may not be. He spoke in private with Benedict for a long while."

"And that is the other thing. These separate orders. This secrecy . . . . He is not trusting us any more than he has to."

Random chuckled. So did I.

"All right," I said. "Maybe I would not either. But three days to launch a war." I shook my head. "He had better know something we don't."

"I get the impression that it is more a pre-emptory strike than a war."

"Only he did not bother to tell us what we are pre-empting."

Random shrugged, poured more wine.

"Perhaps he will say when he gets back. You did not get any special orders, did you?"

"Just to stand and wait. What about you?"

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He shook his head.

"He said that when the time comes, I will know. At least with Julian, he told him to have his troops ready to move on a moment's notice."

"Oh? Aren't they staying in Arden?"

He nodded.

"When did he say this?"

"After you left. He trumped Julian up here to give him the message, and they rode off together. I heard Dad say that he would ride partway back with him."

"Did they take the eastern trail over Kolvir?"

"Yes. I saw them off."

"Interesting. What else did I miss?"

He shifted in his seat.

"The part that bothers me," he said. "After Dad had mounted and waved a good-bye, he looked back at me and said, 'And keep an eye on Martin.' "

"That is all?"

"That is all. But he was laughing as he said it."

"Just natural suspicion of a newcomer, I guess."

"Then why the laugh?"

"I give up."

I cut a piece of cheese and ate it.

"Might not be a bad idea, though. It might not be suspicion. Maybe he feels Martin needs to be protected from something. Or both. Or neither. You know how he sometimes is."

Random stood.

"I had not thought through to the alternative. Come with me now, huh?" he said. "You have been up here all morning."

"All right." I got to my feet, buckled on Grayswandir. "Where is Martin, anyway?"

"I left him down on the first floor. He was talking with Gérard."

"He is in good hands, then. Is Gérard going to be staying here, or will he be returning to the fleet?"

"I do not know. He would not discuss his orders."

We left the room. We headed for the stairway.

On the way down, I heard some small commotion from below and I quickened my pace.

I looked over the railing and saw a throng of guards at the entrance to the throne room, along with the massive figure of Gérard. All of them had their backs to us. I leaped down the final stairs. Random was not far behind me.

I pushed my way through.

"Gérard, what is happening?" I asked.

"Damned if I know," he said. "Look for yourself. But there is no getting in."

He moved aside and I took a step forward. Then another. And that was it. It was as if I were pushing against a slightly resilient, totally invisible wall. Beyond was a slight that tied my memory and feelings into a knot. I stiffened as fear took hold of me by the neck, clasped my hands. No mean trick, that.

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Martin, smiling, still held a Trump in his left hand, and Benedict—apparently recently summoned—stood before him. A girl was nearby, on the dais beside the throne, facing away. Both men appeared to be speaking, but I could not hear the words.

Finally, Benedict turned and seemed to address the girl. After a time, she appeared to be answering him. Martin moved off to her left. Benedict mounted the dais as she spoke. I could see her face then. The exchange continued.

"That girl looks somewhat familiar," said Gérard, who had moved forward and now stood at my side.

"You might have gotten a glimpse of her as she rode past us," I told him, "the day Eric died. It's Dara."

I heard his sudden intake of breath.

"Dara!" he said. "Then you . . . ." His voice faded.

"I was not lying," I said. "She is real."

"Martin!" cried Random, who had moved up on my right. "Martin! What's going on!"

There was no response.

"I don't think he can hear you," Gérard said. "This barrier seems to have cut us off completely."

Random strained forward, his hands pushing against something unseen.

"Let's all of us give it a shove," he said.

So I tried again. Gérard also threw his weight against the invisible wall.

After half a minute without success, I eased back.

"No good," I said. "We can't move it."

"What is the damned thing?" Random asked. "What is holding—"

I'd had a hunch—only that, though—as to what might be going on.

And only because of the *deja vu* character of the entire piece. Now, though . . . . Now I clasped my hand to my scabbard to assure myself that Grayswandir still hung at my side.

It did.

Then how could I explain the presence of my distinctive blade, its elaborate tracery gleaming for all to see, hanging where it had suddenly appeared, without support, in the air before the throne, its point barely touching Dara's throat?

I could not.

But it was too similar to what had happened that night in the dream city in the sky. Tir-na Nog'th, to be a coincidence. Here were none of the trappings—the darkness, the confusion, the heavy shadows, the tumultuous emotions I had known—and yet the piece was set much as it had been that night. It was very similar. But not precisely so. Benedict's stance seemed somewhat off—farther back, his body angled differently. While I could not read her lips, I wondered whether Dara was asking the same

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strange questions. I doubted it. The tableau—like, yet unlike, that which I had experienced—had probably been colored at the other end—that is, if there were any connection at all—by the effects of Tir-na Nog'th's powers on my mind at that time.

"Corwin," Random said, "that looks like Grayswandir hanging in front of her."

"It does, doesn't it?" I replied. "But as you can see, I am wearing my blade."

"There can't be another just like it . . . can there? Do you know what is happening?"

"I am beginning to feel as if I may," I said. "Whatever, I am powerless to stop it."

Benedict's blade suddenly came free and engaged the other, so like my own. In a moment, he was fighting an invisible opponent.

"Give him hell, Benedict!" Random shouted.

"It is no use," I said. "He is about to be disarmed."

"How can you know?" Gérard asked.

"Somehow, that is me in there fighting with him," I said. "This is the other end of my dream in Tir-na Nog'th. I do not know how he managed it, but this is the price for Dad's recovering the Jewel."

"I do not follow you," he said.

I shook my head.

"I do not pretend to understand how it is being done," I told him. "But we will not be able to enter until two things have vanished from that room."

"What two things?"

"Just watch."

Benedict's blade had changed hands, and his gleaming prosthesis shot forward and fixed itself upon some unseen target. The two blades parried one another, locked, pressed, their points moving toward the ceiling. Benedict's right hand continued to tighten.

Suddenly, the Grayswandir-blade was free and moving past the other. It struck a terrific blow to Benedict's right arm at the place where the metal portion joined it. Benedict turned—and the action was blocked to our view for several moments.

Then the sight was clear again as Benedict dropped to one knee, turning. He clutched at the stump of his arm. The mechanical hand/arm hung in the air near Grayswandir. It was moving away from Benedict and descending, as was the blade. When both reached the floor, they did not strike it but passed on through, vanishing from sight.

I lurched forward, recovered my balance, moved ahead. The barrier was gone.

Martin and Dara reached Benedict before we did. Dara had already torn a strip from her cloak and was binding Benedict's stump when Gérard, Random and I got there.

Random seized Martin by the shoulder and turned him.

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"What happened?" he asked.

"Dara—Dara told me she wanted to see Amber," he said. "Since I live here now, I agreed to bring her through and show her around. Then—"

"Bring her through? You mean on a Trump?"

"Well, yes."

"Yours or hers?"

Martin raked his lower lip with his teeth.

"Well, you see . . ."

"Give me those cards," said Random, and he snatched the case from Martin's belt. He opened it and began going through them.

"Then I thought to tell Benedict since he was interested in her," Martin went on. "Then Benedict wanted to come and see—"

"What the hell!" Random said. "There is one of you, one of her, and one of a guy I've never even seen before! Where did you get these?"

"Let me see them," I said.

He passed me the three cards.

"Well?" he said. "Was it Brand? He is the only one I know who can make Trumps now."

"I would not have anything to do with Brand," Martin replied, "except to kill him."

But I already knew they were not from Brand. They were simply not in his style. Nor were they in the style of anyone whose work I knew. Style was not foremost in my mind at that moment, however. Rather, it was the features of the third person, the one whom Random had said he had never seen before. I had. I was looking at the face of the youth who had confronted me with a crossbow before the Courts of Chaos, recognized me and then declined to shoot.

I extended the card.

"Martin, who is this?" I asked.

"The man who made these extra Trumps," he said. "He drew one of himself while he was about it. I do not know his name. He is a friend of Dara's."

"You are lying," Random said.

"Then let Dara tell us," I said, and I turned to her.

She still knelt beside Benedict, though she had finished bandaging him and he was now sitting up.

"How about it?" I said, waving the card at her. "Who is this man?"

She glanced at the card, then up at me. She smiled.

"You really do not know?" she asked.

"Would I be asking if I did?"

"Then look at it again and go look in a mirror. He is your son as much as mine. His name is Merlin."

I am not easily shocked, but this had nothing of ease about it. I felt dizzy. But my mind moved quickly. With the proper time differential, the thing was possible.

"Dara," I said, "what is it that you want?"

"I told you when I walked the Pattern," she said, "that Amber

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must be destroyed. What I want is to have my rightful part in it."

"You will have my old cell," I said. "No, the one next to it. Guards!"

"Corwin, it is all right," Benedict said, getting to his feet. "It is not as bad as it sounds. She can explain everything."

"Then let her start now."

"No. In private. Just family."

I motioned back the guards who had come at my call.

"Very well. Let us adjourn to one of the rooms up the hall."

He nodded, and Dara took hold of his left arm. Random, Gérard, Martin and I followed them out. I looked back once to the empty place where my dream had come true. Such is the stuff.

II.

I RODE UP over the crest of Kolvir and dismounted when I came to my tomb. I went inside and opened the casket. It was empty. Good. I was beginning to wonder. I had half-expected to see myself laid out before me, evidence that despite signs and intuitions, I had somehow wandered into the wrong shadow.

I went back outside and rubbed Star's nose. The sun was shining and the breeze was chill. I had a sudden desire to go to sea. I seated myself on the bench instead and fumbled with my pipe.

We had talked. Seated with her legs beneath her on the brown sofa, Dara had smiled and repeated the story of her descent from Benedict and Lintra, the hellmaid, growing up in and about the Courts of Chaos, a grossly non-Euclidean realm where time itself presented strange distribution problems.

"The things you told me when we met were lies," I said. "Why should I believe you now?"

She had smiled and regarded her fingernails.

"I had to lie to you then, to get what I wanted from you."

"That being. . .?"

"Knowledge, of the family, the Pattern, the Trumps, of Amber. To gain your trust. To have your child."

"The truth would not have served as well?"

"Hardly. I come from the enemy. My reasons for wanting these things were not the sort of which you would approve."

"Your swordplay. . . ? You told me then that Benedict had trained you."

She smiled again and her eyes showed dark fires.

"I learned from the great Duke Borel himself, a High Lord of Chaos."

". . . and your appearance," I said. "It was altered on a number of occasions when I saw you walk the Pattern. How? Also, why?"

"All whose origins involve Chaos are shapeshifters," she replied.

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I thought of Dworkin's performance the night he had impersonated me.

Benedict nodded.

"Dad fooled us with his Ganelon disguise."

"Oberon is a son of Chaos," Dara said, "a rebel son of a rebel father. But the power is still there."

"Then why is it we cannot do it?" Random asked.

She shrugged.

"Have you ever tried? Perhaps you can. On the other hand, it may have died out with your generation. I do not know. As to myself, however, I have certain favored shapes to which I revert in times of stress. I grew up where this was the rule, where the other shape was actually sometimes dominant. It is still a reflex with me. This is what you witnessed—that day."

"Dara," I said, "why did you want the things that you said you wanted—knowledge of the family, the Pattern, the Trumps, Amber? And a son?"

"All right" She sighed. "All right. You are by now aware of Brand's plans—the destruction and rebuilding of Amber. . . ?"

"Yes."

"This involved our consent and cooperation."

"Including the murder of Martin?" Random asked.

"No," she said. "We did not know who he intended to use as the—agent."

"Would it have stopped you had you known?"

"You are asking a hypothetical question," she said. "Answer it yourself. I am glad that Martin is still alive. That is all that I can say about it."

"All right," Random said. "What about Brand?"

"He was able to contact our leaders by methods he had learned from Dworkin. He had ambitions. He needed knowledge, power. He offered a deal."

"What sort of knowledge?"

"For one thing, he did not know how to destroy the Pattern—"

"Then you *were* responsibile for what he did," Random said.

"If you choose to look at it that way."

"I do."

She shrugged, looked at me.

"Do you want to hear this story?"

"Go ahead." I glanced at Random and he nodded.

"Brand was given what he wanted," she said, "but he was not trusted. It was feared that once he possessed the power to shape the world as he would, he would not stop with ruling over a revised Amber. He would attempt to extend his dominion over Chaos as well. A weakened Amber was what was desired so that Chaos would be stronger than it now is—the striking of a new balance, giving to us more of the Shadowlands that lie between our realms. It was realized long ago that the two kingdoms can never be

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merged, or one destroyed, without also disrupting all the processes that lie in flux between us. Total stasis or complete chaos would be the result. Yet, though it was seen what Brand had in mind, our leaders came to terms with him. It was the best opportunity to present itself in ages. It had to be seized. It was felt that Brand could be dealt with, and finally replaced, when the time came."

"So you were also planning a double-cross," Random said.

"Not if he kept his word. But then, we knew that he would not. So we provided for the move against him."

"How?"

"He would be allowed to accomplish his end and then be destroyed. He would be succeeded by a member of the royal family of Amber who was also of the first family of the Courts, one who had been raised among us and trained for the position. Merlin even traces his connection with Amber on both sides, through my forebear Benedict and directly from yourself—the two most favored claimants to your throne."

"You are of the royal house of Chaos?"

She smiled.

I rose. Strode away. Stared at the ashes on the grate.

"I find it somewhat distressing to have been involved in a calculated breeding project," I said, at length. "But be that as it may, and accepting everything you have said as true—for the moment—why are you telling us all of these things now?"

"Because," she said, "I fear that the lords of my realm would go as far for their vision as Brand would for his. Farther, perhaps. That balance I spoke of. Few seem to appreciate what a delicate thing it is. I have traveled in the Shadowlands near to Amber, and I have walked in Amber herself. I also have known the shadows that lie by Chaos' side. I have met many people and seen many things. Then, when I encountered Martin and spoke with him, I began to feel that the changes I had been told would be for the better would not simply result in a revision of Amber more along the lines of my elders' liking.

"They would, instead, turn Amber into a mere extension of the Courts, most of the shadows would boil away to join with Chaos. Amber would become an island. Some of my seniors who still smart at Dworkin's having created Amber in the first place are really seeking a return to the days before this happened.

"Total Chaos, from which all things arose. I see the present condition as superior and I wish to preserve it. My desire is that neither side emerge victorious in any conflict."

I turned in time to see Benedict shaking his head.

"Then you are on neither side," he stated.

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"I like to think that I am on both."

"Martin," I said, "are you in this with her?"

He nodded.

Random laughed.

"The two of you? Against both Amber and the Courts of Chaos? What do you hope to achieve? How do you plan to further this notion of balance?"

"We are not alone," she said, "and the plan is not ours."

Her fingers dipped into her pocket. Something glittered when she withdrew them. She turned it in the light. It was our father's signet ring that she held.

"Where did you get that?" Random asked.

"Where else?"

Benedict stepped toward her and held out his hand. She gave it to him. He scrutinized it.

"It *is* his," he said. "It has the little markings on the back that I've seen before. Why do you have it?"

"First, to convince you that I am acting properly when I convey his orders," she said.

"How is it that you even know him?" I asked.

"I met him during his—difficulties—some time back," she told us. "In fact, you might say that I helped to deliver him from them. This was after I had met Martin and I was inclined to be more sympathetic toward Amber. But then, your father is also a charming and persuasive man. I decided that I could not simply stand by and see him remain prisoner to my kin."

"Do you know how he was captured in the first place?"

She shook her head.

"I only know that Brand effected his presence in a shadow far enough from Amber that he would be taken there. I believe it involved a fake quest for a nonexistent magical tool which might heal the Pattern. He realizes now that only the Jewel can do it."

"Your helping him to get away . . . . How did this affect your relations with your own people?"

"Not too damned well," she said. "I am temporarily without a home."

"And you want one here?"

She smiled again.

"It depends on how things turn out. If my people have their way, I would as soon go back—or stay with what shadows remain."

I withdrew a Trump, glanced at it.

"What of Merlin? Where is he now?"

"They have him," she said. "I fear he may be their man now. He knows his parentage, but they have had charge of his education for a long while. I do not know whether he could be gotten away."

I raised the Trump, stared at it.

"No good," she said. "It will not function between here and there."

I recalled how difficult Trump communication had been when I

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had been to the fringes of that place. I tried anyway.

The card grew cold in my hand and I reached out. There was the faintest flicker of a responding presence. I tried harder.

"Merlin, this is Corwin," I said. "Do you hear me?"

I seemed to hear a reply. It seemed to be, "I cannot—" And then there was nothing. The card lost its coldness.

"Did you reach him?" she asked.

"I am not sure," I said. "But I think so. Just for a moment."

"Better than I thought," she said. "Either conditions are good or your minds are very similar."

"When you began waving Dad's signet around, you spoke of orders," Random said. "What orders? And why is he sending them through you?"

"It is a matter of timing."

"Timing? Hell! He just left here this morning!"

"He had to finish one thing before he was ready for another. He had no idea how long it would take. But I was just in touch with him before I came here—though I was hardly prepared for the reception I walked into—and he is now ready to begin the next phase."

"Where did you speak with him?" I asked. "Where is he?"

"I have no idea where he is. He contacted me."

"And. . . ?"

"He wants Benedict to attack immediately."

Gérard finally stirred from the huge armchair in which he had sat listening. He rose to his feet, hooked his thumbs in his belt and looked down at her.

"An order like that would have to come directly from Dad."

"It did," she said.

He shook his head.

"It makes no sense. Why contact you—someone we have small reason to trust—rather than one of us?"

"I do not believe that he can reach you at the moment. On the other hand, he was able to reach me."

"Why?"

"He did not use a Trump. He does not have one for me. He used a reverberation effect of the black road, similar to the means by which Brand once escaped Corwin."

"You know a lot of what has been going on."

"I do. I still have sources in the Courts, and Brand transported himself there after your struggle. I hear things."

"Do you know where our father is right now?" Random asked.

"No, I do not know. But I believe that he has journeyed to the real Amber, to take counsel with Dworkin and to re-examine the damage to the primal Pattern."

"To what end?"

"I do not know. Probably to decide on the course of action he will take. The fact that he reached me

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and ordered the attack most likely means that he has decided."

"How long ago was this communication?"

"Just a few hours—my time. But I was far from here in Shadow. I do not know what the time differential is. I am too new at this."

"So it could be something extremely recent. Possibly only moments ago," Gérard mused. "Why did he talk with you rather than one of us? I do not believe that he could not reach us if he wished to."

"Perhaps to show that he looks upon me with favor," she said.

"All of this may be entirely true," Benedict stated. "But I am not moving without a confirmation of that order."

"Is Fiona still at the primal Pattern?" Random asked.

"Last I heard," I told him, "she had set up camp there. I see what you mean . . . ."

I shuffled out Fi's card.

"It took more than one of us to get through from there," he observed.

"True. So give me a hand."

He rose, came to my side. Benedict and Gérard approached.

"This is not really necessary," Dara protested.

I ignored her and concentrated on the delicate features of my red-haired sister. Moments later we had contact.

"Fiona," I asked, seeing from the background that she was still in residence at the heart of things, "is Dad there?"

"Yes," she said, smiling tightly. "He is inside with Dworkin."

"Listen, urgency prevails. I do not know whether or not you know Dara, but she is here—"

"I know who she is, but I have never met her."

"Well, she claims she has an attack order for Benedict, from Dad. She has his signet to back it up, but he did not speak of this earlier. Do you know anything about it?"

"No," she said. "All we did was exchange greetings when he and Dworkin were out here earlier to look at the Pattern. I had some suspicions then, though, and this confirms them."

"Suspicions? What do you mean?"

"I think Dad is going to try to repair the Pattern. He has the Jewel with him, and I overheard some of the things he said to Dworkin. If he makes the attempt, they will be aware of it in the Courts of Chaos the moment that he begins. They will try to stop him. He would want to strike first to keep them occupied. Only . . . ."

"What?"

"It is going to kill him, Corwin. I know that much about it. Whether he succeeds or fails, he will be destroyed in the process."

"I find it hard to believe."

"That a king would give up his life for the realm?"

"That Dad would."

"Then either he has changed or

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you never really knew him. But I do believe he is going to try it."

"Then why send his latest order by someone he knows we do not really trust?"

"To show that he wants you to trust her, I would guess, once he has confirmed it."

"It seems a roundabout way of doing things, but I agree that we should not act without that confirmation. Can you get it for us?"

"I will try. I will get back to you as soon as I have spoken with him."

She broke the contact.

I turned toward Dara, who had heard only our side of the conversation.

"Do you know what Dad is going to do right now?" I asked her.

"Something involving the black road," she said. "He had indicated that much. What, though, or how, he did not say."

I turned away. I squared my cards and encased them. I did not like this turning of events. This entire day had started badly, and things had been going downhill ever since. It was only a little past lunchtime, too. I shook my head. When I had spoken with him, Dworkin had described the results of any attempt to repair the Pattern, and they had sounded pretty horrendous to me. Supposing Dad tried it, failed, and got himself killed in the attempt? Where would we be then?

Right where we were now, only without a leader, on the eve of battle—and with the succession problem stirring again. That whole ghastly business would be in the back of our minds as we rode to the wars, and we would all begin our private arrangements to fight one another once more as soon as the current enemy was dealt with. There had to be another way of handling things. Better Dad alive and on the throne than a revival of the succession intrigues.

"What are we waiting for?" Dara asked. "Confirmation?"

"Yes," I replied.

Random began to pace. Benedict seated himself and tested the dressing on his arm. Gérard leaned against the mantlepiece. I stood and thought. An idea came to me just then. I pushed it away immediately, but it returned. I did not like it, but that had nothing to do with practicalities. I would have to move quickly, though, before I had a chance to talk myself around to another viewpoint. No. I would stick with this one. Damn it!

There came a stirring of contact. I waited. Moments later I regarded Fiona again. She stood in a familiar place that it took me several seconds to recognize: Dworkin's sitting room, on the other side of the heavy door at the back of the cave. Dad and Dworkin were both with her. Dad had dropped his Ganelon disguise and was his old self once again. I saw that he wore the Jewel.

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"Corwin," Fiona said, "it is true. Dad did send the attack order with Dara, and he expected this call for confirmation. I—"

"Fiona, bring me through."

"What?"

"You heard me. Now!"

I extended my right hand. She reached forward and we touched.

"Corwin!" Random shouted. "What's happening?"

Benedict was on his feet, Gérard already moving toward me.

"You will hear about it shortly," I said, and I stepped forward.

I squeezed her hand before I released it and I smiled.

"Thanks, Fi. Hello, Dad. Hi, Dworkin. How's everything?"

I glanced once at the heavy door, saw that it stood open. Then I passed around Fiona and moved toward them. Dad's head was lowered, his eyes narrowed. I knew that look.

"What is this, Corwin? You are here without leave," he said. "I have confirmed that damned order, now I expect it to be carried out."

"It will be," I said, nodding. "I did not come here to argue about that."

"What, then?"

I moved nearer, calculating my words as well as the distance. I was glad that he had remained seated.

"For a time we rode as comrades," I said. "Damned if I did not come to like you then. I never had before, you know. Never had guts enough to say that before either, but you know it is true. I like to think that that is how things could have been, if we had not been what we are to each other." For the barest moment, his gaze seemed to soften as I positioned myself. Then, "At any rate," I went on, "I am going to believe in you that way rather than this way because there is something I would never have done for you otherwise."

"What?" he asked.

"This."

I seized the Jewel with an upward sweeping motion and snapped the chain up over his head. I pivoted on my heel then and raced across the room and through the door. I drew it shut behind me and snapped it to. I could see no way to bar it from the outside, so I ran on, retracing the route through the cave from the night I had followed Dworkin along it. Behind me I heard the expected bellow.

I followed the twistings. I stumbled only once. Wixer's smell still hung heavy in his lair. I pounded on and a final turning brought me a view of daylight ahead.

I raced toward it, slipping the Jewel's chain over my head as I went. I felt it fall to my breast. I reached down into it with my mind. There were echoes in the cave behind me.

Outside!

I sprinted toward the Pattern, feeling through the Jewel, turning it into an extra sense. I was the only person other than Dad or Dworkin

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fully attuned to it. Dworkin had told me that the Pattern's repair might be effected by a person's walking the Grand Pattern in such a state of attunement, burning out the smear at each crossing, replacing it with stock from the image of the Pattern that he bore within him, wiping out the black road in the process. Better me than Dad, then. I still felt that the black road owed something of its final form to the strength my curse against Amber had given it. I wanted to wipe that out, too. Dad would do a better job of putting things together after the war than I ever could, anyway.

I realized, at that moment, that I no longer wanted the throne. Even if it were available, the prospect of administering to the kingdom down all the dull centuries that might lie before me was overwhelming. Maybe I would be taking the easy way out if I died in this effort. Eric was dead, and I no longer hated him. The other thing that had driven me—the throne—seemed now to have been desirable only because I'd thought he had wanted it so. I renounced both. What was left? I had laughed at Vialle, then wondered. But she had been right. The old soldier in me was strongest. It was a matter of duty. But not duty alone. There was more . . . .

I reached the edge of the Pattern, quickly made my way toward its beginning. I glanced back at the cavemouth. Dad, Dworkin, Fiona—none of them had yet emerged. Good. They could never make it in time to stop me. Once I set foot on the Pattern, it would be too late for them to do anything but wait and watch.

I thought for a fleeting instant of Iago's dissolution, pushed that thought away, strove to calm my mind to the level necessary for the undertaking, recalled my battle with Brand in this place and his strange departure, pushed that away, too slowed my breathing, prepared myself.

A certain lethargy came upon me. It was time to begin, but I held back for a moment, trying to fix my mind properly on the grand task that lay before me. The Pattern swam for a moment in my vision. Now! Damn it! Now! No more preliminaries! Begin, I told myself. Walk!

Still, I stood, contemplating the Pattern as in a dream. I forgot about myself for long moments as I regarded it. The Pattern, with its long black smear to be removed . . . .

It no longer seemed important that it might kill me. My mind drifted, considering the beauty of the thing . . . .

I heard a sound. It would be Dad, Dworkin, Fiona, coming. I had to do somthing before they reached me. I had to walk it, in a moment . . . .

I pulled my gaze away from the Pattern and glanced back toward the cavemouth. They had emerged, come partway down the slope and

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halted. Why? Why had they stopped?

What did it matter? I had the time I needed in which to begin. I began to raise my foot, to step forward.

I could barely move. I inched my foot ahead with a great effort of will. Taking the first step was proving worse than walking the Pattern itself, near to the end. But it did not seem so much an external resistance I fought against as it did the sluggishness of my own body. It was almost as if—

Then I had an image of Benedict beside the Pattern in Tir-na Nog'th, Brand approaching, mocking, the Jewel burning upon his breast.

Before I looked down, I knew what I would see.

The red stone was pulsing in time with my heartbeat.

Damn them!

Either Dad or Dworkin—or both of them—reached through it at this instant, paralyzing me. I did not doubt that either of them could manage it alone. Still, at this distance, it was not worth surrendering without a fight.

I continued to push forward with my foot, sliding it slowly ahead toward the edge of the Pattern. Once I made it, I did not see how they . . . .

Drowsing . . . I felt myself beginning to fall. I had been asleep for a moment. It happened again.

When I opened my eyes, I could see a portion of the Pattern. When I turned my head, I saw feet. When I looked up, I saw Dad holding the Jewel.

"Go away," he said to Dworkin and Fiona without turning his head toward them.

They withdrew as he placed the Jewel about his neck. He leaned forward then and extended his hand. I took it and he drew me to my feet.

"That was a damn-fool thing to do," he said.

"I almost made it."

He nodded.

"Of course you would have killed yourself and not accomplished anything," he said. "But it was well done nevertheless. Come on, let's walk."

He took my arm, and we began to move about the periphery of the Pattern.

I watched that strange sky-sea, horizonless about us, as we went. I wondered what would have happened had I been able to begin the Pattern, what would be happening at that moment.

"You have changed," he finally said, "or else I never really knew you."

I shrugged.

"Something of both perhaps. I was about to say the same of you. Tell me something."

"What?"

"How difficult was it for you, being Ganelon?"

He chuckled.

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"Not hard at all," he said. "You may have had a glimpse of the real me."

"I liked him. Or, rather, you being him. I wonder whatever became of the real Ganelon?"

"Long dead, Corwin. I met him after you had exiled him from Avalon, long ago. He wasn't a bad chap. Wouldn't have trusted him worth a damn, but then I never trust anyone I don't have to."

"It runs in the family."

"I regretted having to kill him. Not that he gave me much choice. All this was very long ago, but I remember him clearly, so he must have impressed me."

"And Lorraine?"

"The country? A good job, I thought. I worked the proper shadow. It grew in strength by my very presence, as any will if one of us stays around for long—as with you in Avalon, and later that other place. And I saw that I had a long while there by exercising my will upon its time-stream."

"I did not know that could be done."

"You grow in strength slowly, beginning with your initiation into the Pattern. There are many things you have yet to learn. Yes, I strengthened Lorraine and made it especially vulnerable to the growing force of the black road. I saw that it would lie in your path, no matter where you went. After your escape, all roads led to Lorraine."

"Why?"

"It was a trap I had set for you, and maybe a test. I wanted to be with you when you met the forces of Chaos. I also wanted to travel with you for a time."

"A test? What were you testing me for? And why travel with me?"

"Can you not guess? I have watched all of you over the years. I never named a successor. I purposely left the matter muddled. You are all enough like me for me to know that the moment I declared for one of you, I would be signing his or her death warrant. No. I intentionally left things as they were until the very end. Now, though, I have decided. It is to be you."

"You communicated with me as yourself, briefly, back in Lorraine. You told me then to take the throne. If you had made up your mind at that point, why did you continue the masquerade?"

"But I had not decided then. That was merely a means to assure your continuing on. I feared you might come to like that girl too much, and that land. When you emerged a hero from the Black Circle, you might have decided to settle and stay there. I wanted to plant the notions that would cause you to continue your journey."

I was silent for a long while. We had moved a good distance about the Pattern.

Then, "There is something that I have to know," I said. "Before I came here, I was speaking with Dara, who is in the process of try-

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ing to clear her name with us—''

''It *is* clear,'' he said. ''I have cleared it.''

I shook my head.

''I refrained from accusing her of something I have been thinking about for some time. There is a very good reason why I feel she cannot be trusted, despite her protests and your endorsement. Two reasons, in fact.''

''I know, Corwin. But she did not kill Benedict's servants to manage her position at his house. I did it myself to assure her getting to you as she did, at just the appropriate time.''

''You? You were party to her whole plot? Why?''

''She will make you a good queen, son. I trust the blood of Chaos for strength. It was time for a fresh infusion. You will take the throne already provided with an heir. By the time he is ready for it, Merlin will long have been weaned from his upbringing.''

We had come all the way around to the place of the black smear. I stopped. I squatted and studied it.

''You think this thing is going to kill you?'' I finally asked.

''I know that it is.''

''You are not above murdering innocent people to manipulate me. Yet you would sacrifice your life for the kingdom.'' I looked up at him. ''My own hands are not clean,'' I went on, ''and I certainly do not presume to judge you.

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Awhile back, though, when I made ready to try the Pattern, I thought how my feelings had changed—toward Eric, toward the throne.

"You do what you do, I believe, as a duty. I, too, feel a duty now, toward Amber, toward the throne. More than that, actually. Much more, I realized just then something that duty does not require of me. I do not know when or how it stopped and I changed, but I do not want the throne, Dad. I am sorry it messes up your plans, but I do not want to be King of Amber. I am sorry."

I looked away then, down at the smear again. I heard him sigh.

Then, "I am going to send you home now," he said. "Saddle your horse and take provisions. Ride to a place outside Amber—any place fairly isolated."

"My tomb?"

He snorted and chuckled faintly.

"That will do. Go there and wait my pleasure. I have some thinking to do."

I stood. He reached out and placed his right hand on my shoulder. The Jewel was pulsing. He looked into my eyes. "No man can have everything he wants the way that he wants it," he said.

And there was a distancing effect, as of the power of a Trump, only working in reverse. I heard voices, then about me I saw the room I had earlier departed. Benedict, Gérard, Random and Dara were still there. I felt Dad release my shoulder. Then he was gone and I was among them once again.

"What is the story?" Random asked. "We saw Dad sending you back. By the way, how did he do that?"

"I do not know," I said. "But he confirms what Dara has told us. He gave her the signet and the message."

"Why?" Gérard asked.

"He wanted us to learn to trust her," I said.

Benedict rose to his feet. "Then I will go and do as I have been bid."

"He wants you to attack, then fall back," Dara said. "After that it will only be necessary to contain them."

"For how long?"

"He said that this will become apparent."

Benedict gave one of his rare smiles and nodded. He managed his card-case with his one hand, removed the deck, thumbed out the special Trump I had given him for the Courts.

"Good luck," Random said.

"Yes," Gérard agreed.

I added my wishes and watched him fade. When his rainbow afterimage had vanished, I looked away and noticed that Dara was crying silently. I did not remark on it.

"I, too, have orders now—of a sort," I said. "I had best be moving."

"And I will get back to the sea," said Gérard.

"No," I heard Dara say as I was

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moving toward the door.

I halted.

"You are to remain here, Gérard, and see to the safety of Amber herself. No attack will come by sea."

"But I thought Random was in charge of the local defense."

She shook her head.

"Random is to join Julian in Arden."

"Are you sure?" Random asked.

"I am certain."

"Good," he said. "It is nice to know he at least thought of me. Sorry, Gérard. That's the breaks."

Gérard simply looked puzzled. "I hope he knows what he is doing," he said.

"We have been through that already," I told him. "Good-bye."

I heard a footfall as I left the room. Dara was beside me.

"What now?" I asked her.

"I thought I would walk with you, wherever you are going."

"I am just going up the hall to get some supplies. Then I am heading for the stables."

"I will go with you."

"I am riding alone."

"I could not accompany you, anyway. I still have to speak with your sisters."

"They're included, huh?"

"Yes."

We walked in silence for a time. Then she said, "The whole business was not so cold-blooded as it seemed, Corwin."

We entered the supply room.

"What business?"

"You know what I mean."

"Oh. That. Well, good."

"I like you. It could be more than that one day, if you feel anything."

My pride handed me a snappy reply, but I bit it back. One learns a few things over the centuries. She had used me, true, but then it seemed she had not been entirely a free agent at the time. The worst that might be said, I suppose, was that Dad wanted me to want her. But I did not let my resentment on this interfere with what my own feelings really were, or could become.

So, "I like you, too," I said, and I looked at her. She seemed as if she needed to be kissed just then, so I did it. "I had better get ready now."

She smiled and squeezed my arm. Then she was gone. I decided not to examine my feelings. I had to get some things together.

I saddled Star and rode back up over the crest of Kolvir until I came to my tomb. Seated outside it, I smoked my pipe and watched the clouds. I felt I had had a very full day, yet it was only early afternoon. Premonitions played tag in the grottoes of my mind, none of which I would have cared to take to lunch.

III.

CONTACT CAME suddenly as I sat drowsing. I was on my feet in an instant. It was Dad.

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"Corwin, I have made my decisions and the time has come," he said. "Bare your left arm."

I did this as his form continued to grow in substantiality, looking more and more regal the while, a strange sadness on his face—a sort I had never seen there before.

He took hold of my arm with his left hand and drew his dagger with his right.

I watched as he cut my arm, then resheathed his blade. The blood came forth, and he cupped his left hand and caught it. He released my arm, covered his left hand with his right and drew away from me. Raising his hands to his face, he blew his breath into them and drew them quickly apart.

A crested red bird the size of a raven, its feathers the color of my blood, stood on his hand, moved to his wrist, looked at me. Even its eyes were red, and there was a look of familiarity as it cocked its head and regarded me.

"He is Corwin, the one you must follow," he told the bird. "Remember him."

Then he transferred it to his left shoulder, from whence it continued to stare at me, making no effort to depart.

"You must go now, Corwin," he said. "Quickly. Mount your horse and ride south, passing into Shadow as soon as you can. Hellride. Get as far away from here as possible."

"Where am I going, Father?" I asked him.

"To the Courts of Chaos. You know the way?"

"In theory. I have never ridden the distance."

He nodded slowly.

"Then get moving," he said. "I want you to create as great a time differential as you can between this place and yourself."

"All right," I replied, "but I do not understand."

"You will, when the time comes."

"But there is an easier way," I protested. "I can get there faster and with a lot less bother simply by getting in touch with Benedict with his Trump and having him take me through."

"No good," Dad said. "It will be necessary for you to take the longer route because you will be carrying something which will be conveyed to you along the way."

"Conveyed? How?"

He reached up and stroked the red bird's feathers.

"By your friend here. He could not fly all the way to the Court—not in time, that is."

"What will he bring me?"

"The Jewel. I doubt that I will be able to effect the transfer myself when I have finished what I have to do with it. Its powers may be of some benefit to us in that place."

"I see," I said. "But I still need not ride the entire distance. I can trump through after I receive it."

"I fear not. Once I have done what must be done here, the

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Trumps will all become inoperative for a period of time."

"Why?"

"Because the entire fabric of existence will be undergoing an alteration. Move now, damn it! Get on your horse and ride!"

I stood and stared a moment longer.

"Father, is there no other way?"

He simply shook his head and raised his hand. He began to fade.

"Good-bye."

I turned and mounted. There was more to say, but it was too late. I turned Star toward the trail that would take me southward.

* * *

While Dad was able to play with the stuff of Shadow atop Kolvir, I had never been able to. I required a greater distance from Amber in order to work the shifts.

Still, knowing that it could be done, I felt that I ought to try. So, working my way southward across bare stone and down rocky passes where the wind howled, I sought to warp the fabric of being about me as I headed toward the trail that led to Garnath.

. . . . a small clump of blue flowers as I rounded a stony shoulder.

I grew excited at this, for they were a modest part of my working. I continued to lay my will upon the world to come beyond each twisting of my way.

A shadow from a triangular stone across my path . . . a shifting of the wind . . . .

Some of the smaller ones were indeed working. A backward twist to the trail . . . a crevice . . . an ancient bird's nest high on a rocky shelf . . . more of the blue flowers . . . .

Why not? A tree . . . another . . . .

I felt the power moving within me. I worked more changes.

A thought came to me then, concerning my newfound strength. It seemed possible that it might have been purely psychological reasons which had barred me from performing such manipulations earlier. Until very recently I had considered Amber herself the single, immutable reality from which all shadows took their form. Now I realized she was but first among shadows, and that the place where my father stood represented the higher reality. Therefore, while the proximity made it difficult, it did not make it impossible to effect changes in this place. Yet, under other circumstances, I would have saved my strength until I had reached a point where it was easier to shift things about.

Now, now though, the need for haste lay upon me. I would have to exert myself, to rush, to do my father's bidding.

By the time I reached the trail leading down the southern face of Kolvir, the character of the land had

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already changed. I looked upon a series of gentle slopes rather than the steep descent which normally marked the way. I was already entering Shadowland.

The black road still lay like a dark scar to my left as I headed downward, but this Garnath through which it had been cut was in slightly better shape than that which I knew so well. Its lines were softer, from flocks of greenery which lay somewhat nearer the dead swath. It was as though my curse upon the land were slightly mitigated. Illusion of feeling, of course, for this was no longer exactly my Amber. But, *I am sorry for my part in this,* I addressed everything mentally, half-prayerlike. *I ride now to try to undo it. Forgive me, oh spirit of this place.* My eyes moved in the direction of the Grove of the Unicorn, but it was far to the west, masked by too many trees, for me to even glimpse that sacred glade.

The slope grew more level as I descended, becoming a series of gentle foothills. I let Star move faster as we crossed them, bearing to the southwest, then finally the south. Lower, lower. At a great distance to my left the sea sparkled and shone. Soon the black road would come between us, for I was descending into Garnath in its direction. No matter what I did with Shadow, I would not be able to erase that ominous presence. In fact, the fastest course I could follow would be one that paralleled it.

We came at last to the floor of the valley. The Forest of Arden towered far to my right, sweeping westward, immense and venerable. I rode on, working what changes I could to bear me even farther from my home.

While keeping the black road on hand, I stayed a good distance from it. I had to, since it was the one thing I could not change. I kept shrubs, trees and low hills between us.

I reached out then, and the texture of the land changed.

Veins of agate . . . heaps of schist . . . a darkening of the greenery . . . .

Clouds swimming across the sky . . . the sun shimmering and dancing . . . . .

We increased our pace. The land sank lower still. Shadows lengthened, merged. The forest retreated. A rocky wall grew to my right, another to my left . . . a cold wind pursued me down a rough canyon. Strata streaks—red, gold, yellow and brown—flashed by. The floor of the canyon grew sandy. Dust devils spun about us. I leaned farther forward as the way began to rise once again. The walls slanted inward, grew closer together.

The way narrowed, narrowed. I could almost touch either wall . . . .

Their tops came together. I rode through a shadowy tunnel, slowing as it darkened . . . phosphorescent designs burst into being. The wind made a moaning noise.

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Out then!

The light from the walls was blinding, and giant crystals rose all about us.

We plunged past, following an upward trail that led away from this region and through a series of mossy dells where small, perfectly circular pools lay as still as green glass.

Tall ferns appeared before us and we made our way among them. I heard a distant trumpeting noise.

Turning, pacing . . . red now the ferns, wider and lower . . . beyond, a great plain, pinking into evening . . . .

Forward, over pale grasses . . . the smell of fresh earth . . . mountains or dark clouds far ahead . . . a rush of stars from my left . . . a quick spray of moisture . . . a blue moon leaps into the sky . . . flickerings among the dark masses . . . memories and a rumbling noise . . . stormsmell and rushing air . . . .

A strong wind . . . clouds across the stars . . . a bright fork spearing a shattered tree to my right, turning it to flame . . . a tingling sensation . . . the smell of ozone . . . sheets of water upon me . . . a row of lights to my left . . . .

Clattering down a cobbled street . . . a strange vehicle approaching . . . cylindrical, chugging . . . we avoid one another . . . a shout pursues me . . . through a lighted window the face of a child . . . .

Clattering . . . splashing . . . storefronts and homes. The rain lets up, dies down, is gone. A fog blows by, lingers, deepens, is pearled by a growing light to my left.

The terrain softens, grows red. The light within the mist brightens. A new wind from behind, a growing warmth . . . the air breaks apart . . . .

Sky of pale lemon . . . orange sun rushing toward noon . . . .

A shudder! A thing not of my doing, totally unanticipated. The ground moves beneath us, but there is more to it than that. The new sky, the new sun, the rusty desert I have just now entered—all of them expand and contract, fade and return. There comes a cracking sound, and with each fading I find Star and myself alone, amid a white nothingness—characters without a setting. We tread upon nothing. The light comes from everywhere and illuminates only ourselves. A steady cracking noise, as of the spring thaw come upon a Russian river I had once ridden beside, fills my ears. Star, who has paced many shadows, emits a frightened sound.

I look all about me. Blurred outlines appear, sharpen, grow clear. My environment is restored, though with a somewhat washed-out look to it. A bit of the pigment has been drained from the world.

We wheel to the left, racing for a low hill, mounting it, halting finally at its summit.

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The black road. It too seems denatured—but even more so than the rest. It ripples beneath my gaze, almost seems to undulate as I watch. The cracking noise continues, grows louder . . . .

A wind comes out of the north, gentle at first but increasing in force. Looking in that direction, I see a mass of dark clouds building.

I know that I must move as I have never moved before. Ultimates of destruction and creation are occurring at the place I visited—when? No matter. The waves move outward from Amber and this too may pass away—and me along with it if Dad cannot pull it all back together again.

I shake the reins. We race southward.

A plain . . . trees . . . some broken building . . . faster . . . .

The smoke of a forest afire . . . a wall of flame . . . gone . . . .

Yellow sky, blue clouds . . . an armada of dirigibles crossing . . . .

Faster . . . .

The sun drops like a piece of hot iron into a bucket of water, stars become streaks . . . a pale light upon a straight trail . . . sounds dopplered from dark smears, the wailing . . . brighter the light, fainter the prospect . . . gray to my right, my left . . . brighter now . . . nothing but the trail my eyes to ride . . . the wailing heightens to a shriek . . . forms run together . . . we race through a tunnel of Shadow . . . it begins to revolve . . . .

Turning, turning . . . only the road is real . . . the worlds go by . . . I have released my control of the sets and ride now the thrust of the power itself, aimed only to remove me from Amber and hurl me toward Chaos . . . . There is wind upon me and the cry in my ears. Never before have I pushed my power over shadow to its limit. The tunnel grows as slick and seamless as glass. I feel I am riding down a vortex, a maelstrom, the heart of a tornado. Star and I are drenched with sweat . . . . There is a wild feeling of flight upon me, as though I am pursued. The road is become an abstraction. My eyes sting as I try to blink away the perspiration. I cannot hold this ride much longer . . . There comes a throbbing at the base of my skull.

I draw back gently upon the reins and Star begins to slow.

The walls of my tunnel of light grow grainy . . . blotches of gray, black, white, rather than a uniformity of shading . . . brown . . . a hint of blue . . . green. The wailing descends to a hum, a rumble, fading. Gentler the wind . . . shapes come and go . . . .
and go . . . .

Slowing, slowing . . . .

There is no path. I ride on mossy earth. The sky is blue, the clouds are white. I am very lightheaded. I draw rein. I—

Tiny.

I was shocked as I lowered my

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eyes. I stood at the outskirts of a toy village. Houses I could hold in the palm of my hand, miniscule roads, tiny vehicles crawling along them.

I looked back. We had crushed a number of these diminutive residences. I looked all around. There were fewer to the left. I guided Star carefully in that direction, kept moving until we had left that place. I felt badly about it—whatever it was, whoever dwelled there. But there was not a thing that I could do.

I moved again, passing through Shadow, until I came to what seemed a deserted quarry beneath a greenish sky. I felt heavier here. I dismounted, took a drink of water, walked around a bit.

I breathed deeply of the damp air that engulfed me. I was far from Amber now, about as far as one ever need go, and well on my way to Chaos. I had seldom come this far before. While I had chosen this place for a rest stop because it represented the nearest thing to normalcy I could catch hold of, the changes would soon be getting more and more radical.

I was stretching my cramped muscles when I heard the shriek, high in the air above me.

I looked up and saw the dark form descending, Grayswandir coming by reflex into my hand. But the light caught it at a proper angle as it came down, and the winged form took fire on its way.

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My familiar bird circled, circled, descended to my outstretched arm. Those frightening eyes regarded me with a peculiar intelligence, but I did not spare them the attention I might have on another occasion. Instead, I sheathed Grayswandir and reached for the thing the bird bore.

The Jewel of Judgment.

I knew by this that Dad's effort, whatever it had amounted to, was finished. The Pattern had either been repaired or botched. He was either alive or dead. Choose a couple from either column. The effects of his act would be spreading outward from Amber through Shadow now, like the ripples in the proverbial pond. I would learn more of them soon enough. In the meantime, I had my orders.

I drew the chain over my head and let the Jewel fall upon my breast. I remounted Star. My bloodbird emitted a short cry and rose into the air.

We moved again.

. . . . over a landscape where the sky whitened as the ground darkened. Then the land flared and the sky grew black. Then the reverse. And again . . . . With each stride the effect shifted, and as we moved faster, it built to a stroboscopic series of still-shots about us, gradually growing to a jerky animation, then to the hyperactive quality of a silent film. Finally all was a blur.

Points of light flashed past like meteors or comets. I began to feel a throbbing sensation, as of a cosmic heartbeat. Everything began to turn about me as though I had been caught up in a whirlwind.

Something was going wrong. I seemed to be losing control. Could it be that the effects of Dad's doings had already reached the area of Shadow through which I passed? It seemed hardly likely. Still . . . .

Star stumbled. I clung tightly as we went down, not wishing to be separated in Shadow. I struck my shoulder on a hard surface and lay there for a moment, stunned.

When the world came together about me again, I sat up and looked around.

A uniform twilight prevailed, but there were no stars. Instead, large rocks of various shapes and sizes drifted and hovered in the air. I rose to my feet and looked all about.

It was possible, from what I could see of it, that the irregular stony surface on which I stood was itself but a mountain-sized boulder drifting with the others. Star rose and stood shivering at my side. An absolute silence contained us. The still air was cool. There was not another living thing in sight. I did not like this place. I would not have halted here of my own volition. I knelt to inspect Star's legs. I wanted to leave as soon as possible, preferably mounted.

As I was about this, I heard a soft chuckle which might have come from a human throat.

I paused, resting my hand upon Grayswandir's hilt and seeking the

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source of the sound.

Nothing. Nowhere.

Yet I had heard it. I turned slowly, looking in every direction. No . . . .

Then it came again. Only this time I realized that it had its source overhead.

I scanned the floating rocks. Shadow-draped, it was difficult to distinguish—

There!

Ten meters above the ground and thirty or so to my left what appeared to be a human form stood atop a small island in the sky, regarding me. I considered it. Whatever it was, it seemed too far off to pose a threat. I was certain that I could be gone before it could reach me. I moved to mount Star.

"No good, Corwin," called the voice I least wanted to hear just then. "You are locked here. There is no way you can depart without my leave."

I smiled as I mounted, then drew Grayswandir.

"Let's find out," I said. "Come bar my way."

"Very well," he replied, and flames sprang from the bare rock, towering full circle about me, licking, sprawling, soundless.

Star went wild. I slammed Grayswandir back into the scabbard, whipped a corner of my cloak across Star's eyes, spoke soothing words. As I did this, the circle enlarged, the fires receding toward the edges of the great rock on which we stood.

"Convinced?" came the voice. "This place is too small. Ride in any direction. Your mount will panic again before you can shift into Shadow."

"Good-bye, Brand," I said, and I began to ride.

I rode in a large counterclockwise circle about the rocky surface, shielding Star's right eye from the flames about the periphery. I heard Brand chuckle again, not realizing what I was doing.

A pair of large rocks . . . . Good. I rode on by, continuing the course. Now a jagged hedge of stone to my left, a rise, a dip . . . a mess of shadow the fires cast across my path. There. Down. Up. A touch of green to that patch of light. I could feel the shifting begin.

The fact that it is easier for us to take a straight course does not make it the only way. We all pursue it so much of the time, though, that we tend to forget that one can also make progress by going around in circles.

I could feel the shift more strongly as I neared the two large rocks again. Brand caught on about then.

"Hold it, Corwin!"

I threw him a finger and cut between the rocks, heading down into a narrow canyon speckled with points of yellow light. According to specifications.

I drew my cloak away from Star's head and shook the reins. The canyon cut abruptly to the

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right. We followed it into a better-lighted avenue which widened and brightened as we went.

. . . .beneath a jutting overhang, sky of milk shading to pearl on its other side.

Riding deeper, faster, farther. A jagged cliff crowned the upper talus to my left, greening in twisted sign of shrubbery beneath a pink-touched sky.

I rode until the greenery was blue beneath a yellow sky, till the canyon rose to meet a lavender plain where orange rocks rolled as the ground was shaken beneath us in time with Star's hoofbeats. I crossed there under wheeling comets, coming to the shore of a blood-red sea in a place of heavy perfumes. I rode a large green sun and a small bronze one out of the sky as I paced that shore, while skeletal navies clashed and serpents of the deep circled their orange- and blue-sailed vessels. The Jewel pulsed upon me and I drew strength from it. A wild wind came up and lofted us through a copper-clouded sky above a wailing chasm which seemed to extend forever, black-bottomed, spark-shot, fuming with heady scents.

At my back the sound of thunder, ceaseless . . . fine lines, like the craqueleur of an old painting, abreast of us, advancing, everywhere. Cold, a fragrance-killing wind pursues . . .

Lines . . . the cracks widen, blackness flows to fill . . . dark streaks race by, up, down, back upon themselves. The settling of a net, the labors of a gaint invisible spider, world-trapping . . . .

Down, down and down . . . the ground again, wrinkled and leathery as a mummy's neck . . . soundless, our throbbing passage . . . softer the thunder, falling the wind . . . Dad's last gasp? Speed now and away . . . .

A narrowing of lines to the fineness of an etching, fading then in the three suns' heat . . . and faster yet . . . .

A rider approaching . . . hand to hilt in time to my own . . . . Me. Myself coming back? Simultaneous our salutes . . . through one another somehow, the air like a sheet of water that one dry instant . . . What Carroll mirror, what Rebma, Tir-na Nog'th effect? Yet far, far to my left, a black thing writhing. We pace the road . . . it leads me on . . . .

White sky, white ground and no horizon . . . sunless and cloudless the prospect . . . only that thread of black, far off, and gleaming pyramids everywhere, massive, disconcerting.

We tire. I do not like this place. But we have outrun whatever process pursues. Draw rein.

I was tired, but I felt a strange vitality within me. It seemed as though it arose from within my breast. The Jewel. Of course. I made an effort to draw upon this power again. I felt it flow outward through my limbs, barely halting at

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my extremities. It was almost as if—

Yes. I reached out and lay my will upon my blank and geometrical surroundings. They began to alter.

It was a movement. The pyramids shuffled by, darkening as they passed. They shrank, they merged, they passed to gravel. The world turned upside-down and I stood as on the underside of a cloud, watching landscapes flash by beneath/above.

Light streamed past me from a golden sun beneath my feet. This, too, passed, and the fleecy ground darkened, firing waters upward to erode the passing land. Lightnings jumped up to strike the world overhead, to break it apart. In places it shattered and its pieces fell about me.

They began to swirl as a wave of darkness passed.

When the light came again, bluish this time, it held no point source and described no land.

. . . . golden bridges cross the void in great streamers, one of them flashing beneath us even now. We wind along its course, standing the while still as a statue. For an age, perhaps, this goes on. A phenomenon not unrelated to highway hypnosis enters through my eyes, lulls me dangerously.

I do what I can to accelerate our passage. Another age goes by.

Finally, far ahead, a dusky, misty blotch, our terminus, growing very slowly despite our velocity.

By the time we reach it, it is gigantic—an island in the void, forested over with golden, metallic trees . . . .

I stop the motion which has borne us thus far and we move forward under our own power, entering that wood. Grass like aluminum foil crunches beneath us as we pass among those trees. Strange fruit, pale and shiny, hangs about me. There are no animal sounds immediately apparent. Working our way inward, we come to a small clearing through which a quicksilver stream flows. There, I dismount.

"Brother Corwin," comes that voice again. "I have been waiting for you."

IV.

I FACED THE WOOD, watched him emerge from it. I did not draw my weapon as he had not drawn his. I reached down into the Jewel with my mind, though. After the exercise I had just completed, I realized that I could do a lot more than control weather with it. Whatever Brand's power, I felt I'd a weapon now with which to confront it directly. The Jewel pulsed more deeply as I did this.

"Truce," Brand said. "Okay? May we talk?"

"I do not see that we have anything more to say to one another," I told him.

"If you do not give me a chance,

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you will never know for certain, will you?"

He came to a halt about seven meters away, flung his green cloak back over his left shoulder and smiled.

"All right. Say it, whatever it is," I said.

"I tried to stop you," he said, "back there for the Jewel. It is obvious that you know what it is now, that you realize how important it is."

I said nothing.

"Dad has already used it," he continued, "and I am sorry to report that he has failed in what he set out to do with it."

"What? How could you know?"

"I can see through Shadow, Corwin. I would have thought our sister had filled you in more thoroughly on these matters. With a little mental effort, I can perceive whatever I choose now. Naturally I was concerned with the outcome of this affair. So I watched. He is dead, Corwin. The effort was too much for him. He lost control of the forces he was manipulating and was blasted by them a little over halfway through the Pattern."

"You lie!" I said, touching the Jewel.

He shook his head.

"I admit that I am not above lying to gain my ends, but this time I am telling the truth. Dad is dead. I saw him fall. The bird brought you the Jewel then, as he had willed it. We are left in a universe without a Pattern."

I did not want to believe him. But it was possible that Dad had failed. I had had the assurance of the only expert in the business, Dworkin, as to the difficulty of the task.

"Granting for the moment what you have said, what happens next?" I asked.

"Things fall apart," he replied. "Even now Chaos wells up to fill the vacuum back at Amber. A great vortex has come into being, and it grows. It spreads ever outward, destroying the Shadow worlds, and it will not stop until it meets with the Courts of Chaos, bringing all of creation full circle, with Chaos once more to reign over all."

I felt dazed. Had I struggled from Greenwood, through everything, to here, to have it end this way? Would I see everything stripped of meaning, form, content, life, when things had been pushed to a kind of completion?

"No!" I said. "It cannot be so."

"Unless . . . ." Brand said softly.

"Unless what?"

"Unless a new Pattern is inscribed, a new order created to preserve form."

"You mean ride back into that mess and try to complete the job? You just said that the place no longer exists."

"No. Of course not. The location is unimportant. Wherever there is a Pattern, there is a center. I can do it right here."

"You think that you can succeed

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where Dad failed?"

"I have to try. I am the only one who knows enough about it and has sufficient time before the waves of Chaos arrive. Listen, I admit to everything Fiona has doubtless told you about me. I have schemed and I have acted. I have dealt with the enemies of Amber. I have shed our blood. I tried to burn out your memory. But the world as we know it is being destroyed now, and I live here too. All of my plans—everything!—will come to nothing if some measure of order is not preserved. Perhaps I have been duped by the Lords of Chaos. It is difficult for me to admit that, but I see the possibility now. It is not too late to foil them, though. We can build the new bastion of order right here."

"How?"

"I need the Jewel—and your assistance. This will be the site of the new Amber."

"Supposing—*arguendo*—I give it to you. Would the new Pattern be exactly like the old one?"

He shook his head.

"It could not be, no more than the one Dad was attempting to create would have been like Dworkin's. No two authors can render the same story in the same fashion. Individual stylistic differences cannot be avoided. No matter how hard I might try to duplicate it, my version would be slightly different."

"How could you do this," I asked, "when you are not fully attuned to the Jewel? You would need a Pattern to complete the process of attunement—and, as you say, the Pattern has been destroyed. What gives?"

"I said that I would need your help," he stated. "There is another way to attune a person to the Jewel. It requires the assistance of someone who is already attuned. You would have to project yourself through the Jewel once more and take me with you—into and through the primary Pattern that lies beyond."

"And then?"

"Why, when the ordeal is past, I will be attuned, you give me the Jewel, I inscribe a new Pattern and we are back in business. Things hold together. Life goes on."

"What of Chaos?"

"The new Pattern will be unmarred. They will no longer have the road giving them access to Amber."

"With Dad dead, how would the new Amber be run?"

He smiled crookedly.

"I ought to have something for my pains, oughtn't I? I will be risking my life with this, and the odds are not all that good."

I smiled back at him.

"Considering the payoff, what is to prevent me from taking the gamble myself?" I said.

"The same thing that prevented Dad from succeeding: all the forces of Chaos. They are summoned by a kind of cosmic reflex when such an act is begun. I have had more ex-

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perience with them than you. You would not have a chance. I might."

"Now let us say that you are lying to me, Brand. Or let us be kind and say that you did not see clearly through all the turmoil. Supposing Dad did succeed? Supposing there is a new Pattern in existence right now? What would happen if you were to do another, here, now?"

"I— It has never been done before. How should I know?"

"I wonder." I said. "Might you still get your own version of reality that way? Might it represent the splitting off of a new universe—Amber and Shadow—just for you? Might it negate ours? Or would it simply stand apart? Or would there be some overlapping? What do you think, given that situation?"

He shrugged his shoulders. "I have already answered that. It has never been done before. How should I know?"

"But I think that you do know, or can make a very good guess at it. I think that that is what you are planning, that that is what you want to try—because that is all you have left now. I take this action on your part as an indication that Dad has succeeded and that you are down to your last card. But you need me and you need the Jewel for it. You cannot have either."

He sighed. "I had expected more of you. But all right. You are wrong, but leave it at that. Listen, though. Rather than see everything lost, I will split the realm with you."

"Brand," I said, "get lost. You cannot have the Jewel, or my help I have heard you out, and I think that you are lying."

"You are afraid," he said "—afraid of me. I do not blame you for not wanting to trust me. But you are making a mistake. You need me now."

"Nevertheless, I have made my choice."

He took a step toward me Another . . . .

"Anything you want, Corwin. can give you anything you care to name."

"I was with Benedict in Tir-na Nog'th," I said, "looking through his eyes, listening with his ears when you made him the same offer. Shove it, Brand. I am going on with my mission. If you think that you can stop me, now is as good a time as any."

I began walking toward him. knew that I would kill him if reached him. I also felt that I would not reach him.

He halted. He took a step backward.

"You are making a big mistake," he said.

"I do not think so. I think that am doing exactly the right thing."

"I will not fight with you," he said hastily. "Not here, not above the Abyss. You have had your chance, though. The next time that we meet, I will have to take the

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Jewel from you."

"What good will it be to you, unattuned as you are?"

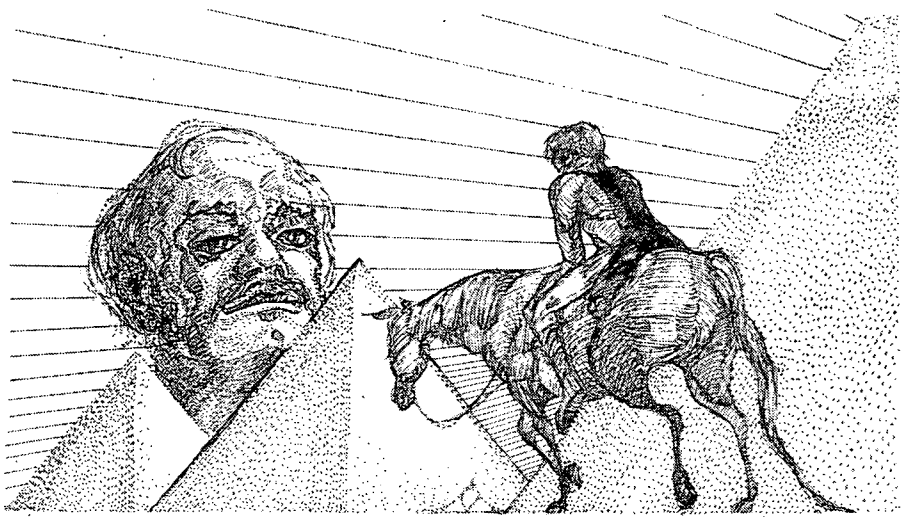
"There still might be a way for me to manage it—more difficult, but possible. You have had your chance. Good-bye."

He retreated into the wood. I followed after, but he had vanished.

* * *

I left that place and rode on along a road over nothing. I did not like to consider the possibility that Brand might have been telling the truth, or at least a part of it. But the things he had said kept returning to plague me. Supposing Dad had failed? Then I was on a fool's errand. Everything was already over, and it was just a matter of time. I did not like looking back, just in case something was gaining on me. I passed into a moderately paced hellride. I wanted to get to the others before the waves of Chaos reached that far—to let them know that I had kept faith, to let them see that in the end I had tried my best. I wondered then how the actual battle was going. Or had it even begun yet, within that time frame?

I swept along the bridge, which widened now beneath a brightening sky. As it assumed the aspect of a golden plain, I considered Brand's threat. Had he said what he had said simply to raise doubts, increase my discomfort and impair my effi-



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ciency? Possibly. Yet if he required the Jewel, he would have to ambush me. And I had a respect for that strange power he had acquired over Shadow. It seemed almost impossible to prepare for an attack by someone who could watch my every move and transport himself instantaneously to the most advantageous spot. How soon might it come? Not too soon, I guessed. First he would want to frazzle my nerves—and I was already tired and more than a little punchy. I would have to rest, to sleep, sooner or later. It was impossible for me to go that great distance in a single stretch, no matter how accelerated the hellride.

Fogs of pink and orange and green fled past, swirled about me, filling up the world. The ground rang beneath us like metal. Occasional musical tones, as of rung crystal, occurred overhead. My thoughts danced. Memories of many worlds came and went in random fashion. Ganelon, my friend-enemy, and my father, enemy-friend, merged and parted, parted and merged. Somewhere one of them asked me who had a right to the throne. I had thought it was Ganelon, wanting to know our several justifications. Now I knew that it had been Dad, wanting to know my feelings. He had judged. He had made his decision. And I was backing out. Whether it was arrested development, the desire to be free of such an encumbrance, or a matter of sudden enlightenment based on all that I had experienced in recent years growing slowly within me, granting me a more mature view of the onerous role of monarch apart from its moments of glory, I do not know.

I remembered my life on the shadow Earth, following orders, giving them. Faces swam before me—people I had known over the centuries—friends, enemies, wives, lovers, relatives. Lorraine seemed to be beckoning me on, Moire laughing. Deirdre weeping. I fought again with Eric. I recalled my first passage through the Pattern as a boy, and the later one when, step by step, my memory was given back to me. Murders, thieveries, knaveries, seductions returned be-

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cause, as Mallory said, they were there. I was unable to even place them all correctly in terms of time.

There was no great anxiety because there was no great guilt. Time, time, and more time had softened the edges of harsher things, had worked its changes on me. I saw my earlier selves as different people, acquaintances I had outgrown. I wondered how I could ever have been some of them. As I rushed onward, scenes from my past seemed to solidify in the mists about me. No poetic license here. Battles in which I had taken part assumed tangible form save for a total absence of sound—the flare of weapons, the colors of uniforms, banners and blood.

And people—most of them now long dead—moved from my memory into silent animation about me. None of these were members of my family but all of them were people who had once meant something to me. Yet there was no special pattern to it. There were noble deeds as well as shameful, enemies as well as friends—and none of the persons involved took note of my passage; all were caught up in some long-past sequence of actions.

I wondered then at the nature of the place through which I rode. Was it some watered-down version of Tir-na Nog'th, with some mind-sensitive substances in the vicinity that drew from me and projected about me this *This Is Your Life* panorama? Or was I simply beginning to hallucinate? I was tired, anxious, troubled, distressed, and I passed along a way which provided a monotonous, gentle stimulation of the senses—the sort leading to reverie. In fact, I realized that I had lost control over Shadow sometime back and was now simply proceeding in a linear fashion across this landscape, trapped in a kind of externalized narcissism by the spectacle. I realized then that I had to stop and rest—probably even sleep a little—though I feared doing so in this place. I would have to break free and make my way to a more sedate, deserted spot.

I wrenched at my surroundings. I twisted things about. I broke free.

Soon I was riding in a rough, mountainous area and shortly thereafter I came to the cave that I desired.

We passed within and I tended to Star. I ate and drank just enough to take the edge off my hunger. I built no fire but wrapped myself in my cloak and in a blanket I had brought. I held Grayswandir in my right hand and lay down facing the darkness beyond the cavemouth.

I felt a little sick. Even though Brand was a liar, his words bothered me anyway.

But I had always been good at going to sleep. I closed my eyes and was gone.

TO BE CONTINUED

* * *

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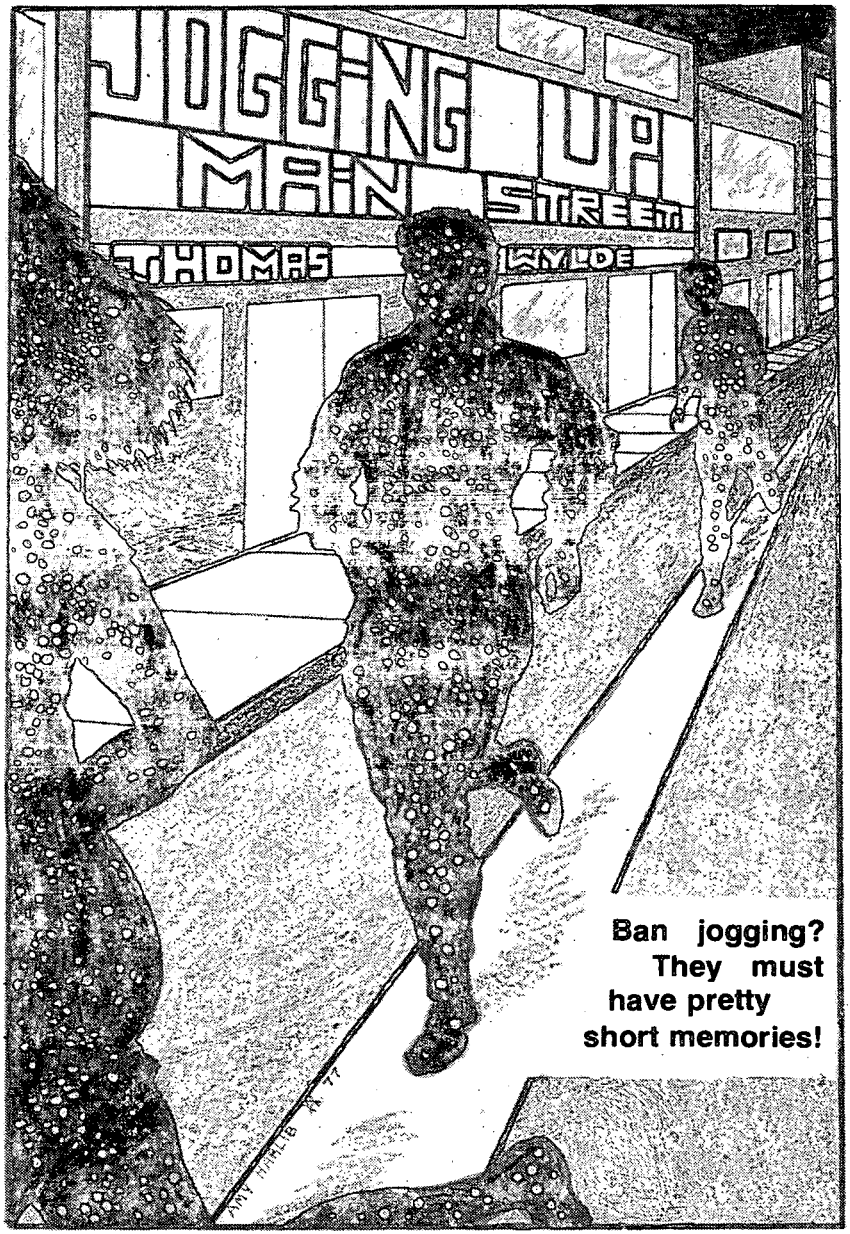

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I'VE BEEN JOGGING nearly twenty years, since I was thirteen. I used to swim a lot when I was a kid, but after the accident I couldn't swim anymore so I took up jogging. Those were the days when *everybody* was jogging.

Nowadays there are just a handful of us hardcore guys still running up Main Street. Used to be lots. Now only a few. It doesn't bother me.

The problem is, I want my son to be a jogger too. He's twelve, and like me at his age, all he wants to do is swim. Who can blame him?

Certainly not his mother. She doesn't want him to jog. I don't know why.

Used to be the public was all for jogging. A guy couldn't do enough of it. It was considered very healthy. It increased the community good, and everybody was interested in the progress of the joggers.

Used to be a joke: A guy would get sick and call up a pal and say, "Hey, buddy, do my jogging for me, will ya?"

You don't hear that joke anymore, I can tell you that.

Nowadays the public is soured on jogging. They say it's bad for you, bad for all of us. At best they say it's unnecessary.

As if staying in top shape is unnecessary. I don't understand people who think like that.

I know a guy I used to jog with. He quit to take up billiards. It's crazy. "Pool makes more sense to me," he says.

More sense! Can you believe that?

But at least he remembers how important jogging used to be (and still is). "Sure it's good," he says "Like putting spin on a ball. You get in top condition and you feel like you're doing something valuable. It's just that nowadays I figure pool makes more sense."

Well, what can I tell him?

The way I see it, he's out of the Club.

We joggers are rather clique-ish. Especially these days when guys are quitting the Road right and left. There's barely a hundred joggers in this burg. But those that are left are the best, the strongest, the fastest, the meanest and the most dedicated bunch of guys I know.

The hell with the lazy bastards who drop out. I say it just makes more room for the rest of us.

What I really want to do, of course, is make room for my kid, Jack.

Jack is twelve, like I said. It's time he took up the Road.

And he's not altogether hostile to the idea. Sure, he likes his swimming. I don't want him to lose out on that. But he doesn't have to jog very long each day. Not like I do.

I'm still a fanatic jogger. I go pounding up Main Street six hours a day. In two shifts, of course. I'm not *crazy*.

Jack said he'd come along with me on a run one of these days. That settled it, as far as I'm concerned. I

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wasn't worried about him.

I just had to get my damned wife off our backs.

She thinks I jog too much.

Well, times have changed.

Used to be I couldn't jog enough to satisfy her. She was very proud of me and my fast running. She even used to jog with me. (I'd slow down and let her dog my heels for a few laps, then *whoosh*—I'd leave her panting in the distance. After a while I'd come back for her, don't you worry about that. 'Cause when we were through with the day's jogging, we'd go to my little cottage and get some more exercise. Know what I mean? Wink, wink.)

Anyway, now she had this bug up her butt about Jack not starting out on the Joggers' Road. It's crazy, like I said.

Hell, it's not as though I was going to try to put her precious *daughter* on Main Street. You know it's true because Lucy was twelve last year and I never said a thing about it. She can stay at home and fool around, swim, anything she wants. I don't care.

Not that girls never jogged up Main Street. Used to be a lot of them.

(Before I married Sylvia—and, yes, *after* I married her, too—I used to go down to Main Street just to watch the girls run by. Some of those teenage girls jogged past with a lot of extraneous movement of the fleshier parts of the upper torso, if you get my drift. Wink, wink. But those days are just about over. Damn it.)

Still, I never offered to put Lucy on the Road. I hope Sylvia appreciates the gesture. Maybe she never even noticed. (Fact is, I'm kind of hoping Lucy will see Jack running with me and decide she'd like to give it a try too. But don't get me wrong; I'm not one for duplicity. I'm just cunning and crafty, right?)

So I figured Sylvia was the main stumbling block.

Then I heard some nasty rumors that the goddam government might ban jogging altogether.

Incredible.

The way I see it, they're attacking the foundations of life in this burg. Maybe I'm prejudiced, but I think history will bear me out.

* * *

It's insane, but after I heard the rumors, I began to see for myself. I was jogging up Main Street and some of my so-called neighbors came out to yell at me. "Go on back home!" they yelled. "Get off the street."

It was incredible!

I ran on past them without looking back. It was hard to believe I knew some of those people. Some of them were my friends. Used to be my friends. . . .

I spotted another jogger up ahead of me and I sprinted to catch up. The poor guy turned around so fast

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he nearly fell down. He thought I was *chasing* him. "Damn!" he said after I smiled and urged him ahead.

We ran on a little bit until we were across the canal and out in the country (if you can call it that). Then we fell out and flopped down on the grass beside a wooden fence. There were a couple of cows grazing off aways.

We got our breath, then started laughing about our encounter. "Really," he said. "I've been expecting somebody to come after me with a gun or something. They don't want us to jog anymore."

I told him what I've already told you: "It's crazy."

"I know, but what can we do about it?"

"Do we have to *do* anything? Why not just keep running?"

"Yeah, I know," he said, wiping the sweat off his shiny forehead. "But what if they really come after us? It don't take much to stop a jogger on Main Street."

I couldn't argue with that. It's a lot harder to run than it is to stop a guy from running. I remember a *long* time ago, before the accident, I used to play a game in a field where somebody would grab a ball and try to run it past a lot of other kids. It was hard work.

The guy said his name was Tim. He was a couple years younger than me, but he'd been jogging exactly as long. He started back when I did, even though he was only ten or eleven years old. I told you, those were the days when *everybody* jogged.

Tim was one of the hardcore joggers.

He was also married. Two daughters, both pretty young and (he said) pretty as well. (All fathers know their daughters are pretty, right? Me too.)

So Tim didn't have the problem I had with Jack.

Or rather the problem I had with Sylvia.

Unfortunately, we both seemed to have an even bigger problem with the goddam government.

Tim said he knew for a fact there was a jogging ban in the works.

"It's crazy," I said.

"I know," he said.

After a while he took to the Road again. I gave him a five-minute start, then hit the line myself. (Everybody jogs right up the middle of Main Street, right on the center line. It's traditional, sure, but it also serves a function. Where else could you run?)

* * *

The next day I decided to sneak Jack out of the house and put him on the Road. He didn't object. And Sylvia didn't know about it.

Even if Jack hadn't cared to run, he would have turned out just to show off the jogging suit I got for him. It was green, like mine, with yellow stripes. (Mine were white.)

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We went right to the center of town and stood off to the side, doing some warm-up exercises.

It was a good day to run.

(Hell, it's always a good day to run.)

But this particular day was beautiful, cool and crisp, the air so clear you could see the whole world.

We did some deep breathing before we started. The air was what they used to call "high-altitude blend," but I never knew why.

It didn't matter *what* they called it. It smelled great.

"Ready?" I said.

Jack looked a little worried. "If you go slow."

We stepped out onto Main Street. The Baker came out of his shop and frowned at us. I ignored him and turned to Jack. "You lead off. That way you can set the pace."

Jack looked both ways up Main Street. "Which way?"

It was a joke.

"You ought to know by now!"

He smiled and we started off up Main Street, our cushion shoes slapping the red line. I have to say this, the kid knew where to put his feet. He ran like a natural.

I let him take a short lead so's not to crowd his heels. The pace was surprisingly strong. Well, that wouldn't last. First-time runners tend to overestimate their stamina.

We jogged out of town, following Main Street over the canal and out between the cow pastures that stretched as far as you could see left and right. It was a little silly to call such a "country" road Main Street, but there were never any serious plans to rename it. After all—it is the street that runs right through the center of our little burg, isn't it? And that's what *Main Street* is all about.

We saw a farmer out mowing the wheat in his little field. Jack waved. I guess the farmer didn't see us.

A littler farther on we swooped into the village. It's still called Main Street through here, of course. We were back into some country before we knew it.

Jack was really eating up the Road. I was proud of his endurance, proud of what we joggers call *heart*. It's nice to see a boy turn out the way you always knew—or hoped—he would.

Nice:

What a goddam understatement!

Jack was running up a storm, all right. But I knew it wouldn't last.

We were a mile and a half out of town when he began to crap out. (I have to say here that we joggers use the measure of "mile" instead of the metric system everybody else uses. It sets us apart, you know? And with sentiment turning against us, we need every bit of support we can muster. We form a clique, like I said. But mostly it's for self-protection. We're not snobs or anything like that. Used to be we got together just to keep our spirits up, to keep us on the Road, to keep us doing what we knew we had to do.

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Running still *hurts*, don't forget. We need to keep pushing ourselves back out on that Road.)

Anyway, Jack crapped out so we flopped on the side of Main Street to take a break.

A minute later Jack was still sucking hard at our high-altitude blend. "Damn," he said between gasps. "You sure—work hard—out here."

"That's right."

"And you—go a lot—farther!"

"I sure do. But don't let your first experience ruin it for you."

I decided to let Jack pant in peace. I didn't want him to think I was riding him, forcing him to jump back on the Road right away. I figured it would embarrass him if I sat there and stared at him.

So I wandered off into a field, kicking along through the tall grass. The sweat was drying on my forehead and arms and I felt deliciously cool. I swung my arms around and liked the way my shoulders rolled. I was feeling very *physical*.

Suddenly it didn't matter that Sylvia and I were having a fight. It only mattered that she wasn't *here* in this grassy field with me.

I did some quick squats and jumps, then went back to see how Jack was getting on. I really didn't want to hurry him along.

It's just that suddenly there was something on my mind. The quicker I got back to the cottage, the quicker I could get hold of Sylvia and straighten this matter out.

(I'm talking about *my* matter. This fight about jogging could wait. You know what I mean? Wink.)

Jack was a little shaky but ready to hit it.

Again I let him pace us up the Road back into town. I hoped his pride wouldn't put too much pressure on him to trudge along faster than was comfortable. I knew if I ran ahead of him, I'd have to keep looking back to see if he was lagging. And that would have put even more pressure on him.

We slapped the red line on up Main Street to what I call "the starting line." (All of us joggers have our own "starting lines.")

We took a short break.

Jack asked me if I was going to continue jogging.

"Of course," I said. "It's my life."

I told him the rumored ban wouldn't stop me. He said he meant was I going to continue jogging *now*.

I was thinking about Sylvia, of course, but I didn't want to tell him why, exactly.

But then my feelthy plans were shot down when Sylvia walked up, looking so goddam *betrayed* that I wanted to apologize immediately for plucking baby Jack from her breast.

Our conversation was short and rather bitter. Good thing Jack was standing right there. I think she wanted to hit me. (Personally I think she was over-reacting. Of

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course I knew "jogging" had little to do with her anger. She just thought I would bow to her intentions concerning her son. Now she knew better. It's an old story.)

She took Jack back to the cottage. I stayed on Main Street. The Baker came out of his shop and looked like he was about to say something sarcastic.

There was nothing to do but hit the Road some more.

I took off in a pace that would have made Jack cringe.

I wanted to push myself. To tell you the truth, I was feeling mighty betrayed myself. I knew Sylvia couldn't read my mind or fathom my desires. (She was always a trifle slow in these matters.) And I knew her scene (with Jack watching) was not a flat rejection of *that* part of our relationship. Maybe I knew it was nothing *personal*, but I couldn't help taking it that way.

So I pushed myself.

I was feeling bad.

I was feeling mean.

Above all, I was feeling frustrated.

Maybe I could blame Sylvia for what happened next.

At least for my part of it.

* * *

I was just coming into town again when I saw the mob.

Well, maybe "mob" is a bit emotional.

Let's just say half a dozen guys were standing in the Road in my path. It looked like they wanted to tell me something.

But I wasn't exactly in the mood for any conversation. Besides, I kind of knew what they wanted to say.

And I certainly wasn't in the mood to stop running.

So I uttered a short yell and ran right through them.

They were so surprised half of them jumped up and started running after me.

Then they realized they were *doing* what they wanted me to *stop* doing. They dropped back.

I watched them over my shoulder as they shuffled back to the center of town. I had to laugh.

Up ahead I spotted some runners. Naturally they were moving in the same direction I was running. But they weren't getting any farther away because I was really putting on the steam.

I caught the guys in a quarter of a mile.

I recognized my new running friend, Tim. He was pacing a few buddies up Main Street. I quickly told them what had happened in town. They knew all about it. The same thing had happened to them.

"We got to get organized," I said. "If we go running through town in a pack, I don't see how they can stop us. We'd knock 'em ass over meatballs."

But these guys were already

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working on the problem. When we got to the village, another dozen or so joggers joined our group. We all laughed and shouted at one another.

As we made our way up Main Street, more and more runners joined our convoy. Now there were about thirty of us. Even my pool-shooting friend had joined us.

Everybody was running strong and mean, strung out in single file, smacking the red line in unison. We rolled up Main Street like a string of ballbearings.

It was exhilarating. Running had never been better.

We were flashing through the "country," headed into town. I could see we had a reception committee waiting for us, but the word hadn't got around town much yet. There were only a few dozen milling around in the middle of Main Street.

We pounded up the red line and *growled*.

The mob splashed aside like a mud puddle under our sixty pushing feet.

I heard some screams and angry yells but could only laugh as we raced out of town, across the canal and back into the country.

God, that felt *good*.

The sweat was flowing free by now and everybody in the line was breathing in marathon cadence. I could feel the run adjusting the movement of my muscles. I was getting my mind set for a long road-time.

I had my running mantra puffing through my teeth.

I felt strong.

I knew I could run forever.

Run forever. . . .

In the old days that was the way it seemed to us all. It wasn't so much that we felt we *could* run forever. We just assessed the situation and it looked to us like we'd *have* to run forever.

Times have changed, like I said.

In the old days everybody ran.

It was not something you thought about much. It was just *there*. A fact of life. A fact that had become life. A fact that made life worth living.

I looked up the line and saw Mr. Galway at the head of the joggers. I could feel tears coming to my eyes.

Mr. Galway had to be fifty-five or sixty years old. Maybe older. I don't think anybody will ever know for sure. (Even my *dad* looked up to this man, I remember.)

It was only fitting that he should lead this line of joggers. He's the man who started the whole thing almost twenty years ago.

He's the man who saved our lives.

And, more important, he saved our spirits.

It was like having a saint lead our little gang up Main Street.

Suddenly we were chanting the Joggers' Chant. I don't know who started it. With forty or fifty of us running, I think the Chant just came out spontaneously.

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"Up the hill!" we shouted.

"Down the hill!"

"All the way!"

"All the way!"

"Around the hill!"

"Through the hill!"

"All the way!"

"All the way!"

I fit the Chant around my running mantra like a cloak.

Everything was filled up now, muscles, lungs, throat and mind.

We ran the finest run.

"All the way!"

"All the way!"

I looked up, up in the sky. We were thundering through the village, which is halfway around from the town. That meant the town was just another mile away and directly overhead.

I looked up in the sky, following the red line of Main Street all the way up into town. The town was exactly the diameter of our little burg—about six-tenths of a mile. It was possible to see a large crowd clogging the street in the center of town.

The word had gone out.

Apparently the government was bent on stopping us. There would be no more running up Main Street.

Running up Main Street.

I remembered when Jack asked me why runners only ran *up* Main Street and not *down*. (By "down" he meant, of course, in the direction of spin.) The answer was simple.

Now, as we swept around the curve toward the town, I thought about the answer I gave him then and it presented such a simple solution to this whole anti-jogging fiasco that I almost tripped over my own feet.

A second later I had left the red line (for the first time in my life) and was running past a lot of incredulous, chanting joggers toward Mr. Galway.

It was hard going. The pace was murder, and I was not exactly a fresh runner.

Then again, neither was I a novice.

I knew where the reserves lay.

I tapped them . . . and speeded up.

The Chant was petering out. Every time I passed another jogger, he stopped chanting and yelled at me. Luckily the guys ahead of me were chanting too loud to notice what was going on behind them. If one of them had turned and looked back, I might never have made it to the front.

I reached Mr. Galway with less than a hundred yards to go. It was hard to believe a man of his years was responsible for the killing pace. He seemed to be *cruising*.

It turned out he was as horrified as anyone that I was running along off the red center-of-mass line. I could see he was angry. I thought for a moment he might knock me down.

But instead he listened to my breathless plan.

And he saw I was right.

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* * *

It was harder than I'd thought to stop our jogline. I'm afraid some faces got punched, some bodies trampled and some harsh words thoughtlessly shouted before the whole bunch of us—runners, government leaders, goons and rubbernecks—could begin a more or less controlled shouting match.

Somewhere in the middle my plan was proposed, explained, debated, voted in and proclaimed law.

It was simply this: Odd days joggers jog *up* Main Street; even days jog *down*.

Joggers could keep informal logs to make sure the effects of the odd days were canceled on the even days.

All this because in the twenty years since the accident when we lost spin and couldn't control the spin rockets and couldn't go EVA to fix them because of the radiation, we had run our ship up to half a gee spin-gravity.

It was felt by the government that this was more than enough to keep the calcium from migrating out of our bones and quite sufficient to keep us in good physical health until we reached the terminus.

The terminus.

Well, hopefully Jack will be around for *that* little event.

We're still ten years from Turnaround, with another forty years or

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so after that to the Centauri system. If I made it, I'd be eighty-four. Well, I guess I got a chance. My own dad was killed after the accident—he was one of those who went EVA to see what could be done about our spin loss. He never knew what a lot of heroes we joggers became. . . .

Lately "hero" didn't exactly describe us.

(I found out later that the government was merely preparing to *discourage* full-scale jogging. After all, we had to stop increasing our spin *sometime*. People were beginning to complain about getting too heavy. The government considered it a matter to look into. There was no crisis. It was when I—and some other hotheads—bulled though town at high speed that things got out of hand. We joggers were known to be clique-ish. Suddenly the government was afraid we'd turn *militant*. They got tough and we got tougher. The whole thing was blown up out of proportion in a matter of minutes.)

Anyway, after the crowd had yelled a lot and talked loud another hour or so, it began to disintegrate.

Most of the joggers left too. They'd made their point.

Years ago you used to hear the phrase, "Joggers make the world go around." Believe it.

It's true.

It was especially true in the first five years or so after the accident. Everything was chaotic. Thank God we still had some spin left—about point one gee.

But with all the hardship and turmoil, Mr. Galway saw to it that one operation continued relentlessly. The joggers pounded up Main Street, running so close together you could reach out and grab the guy ahead of you, four thousand men, women and children, all running at once, continuously (there were four shifts), every second of every minute of every hour—for five and a half years.

And by the end of this crucial period we'd put another point two seven rpm's on our ship—exactly doubling the spin rate we had after the accident. It was enough to quadruple our spin-gravity.

After that—and for the next fourteen years—the hardcore joggers took over. It's taken that long to add that last tenth gee.

"Joggers make the world go around."

It's still true.

Tim grabbed my arm. "Let's run!"

It was an even numbered day, by our peculiar reckoning, so we turned to face the down side of Main Street. "Okay," I said. "But only one lap. I have to get back home and look after my . . . son."

A small lie between joggers.

We started off down the street.

I don't care what anyone says.

It's easier running *down* Main Street.

I said, "Maybe I'll just do *two* laps. . . ." ★

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LUCIFER'S HAMMER

"WHAT WAS ONCE a comet is a pitiful remnant, a double handful of flying hills and boulders of dirty ice. Earth's gravitational field has spread them across the sky.

"Craters glow across the face of the Earth. The sea strikes glow as brightly as the land strikes; but the sea strikes are growing smaller. Walls of water hover around them, edging inward.

"The water hovers two miles high around the Pacific strike. Its edges boil frantically. The pressure of expanding live steam holds back the walls of water.

"And the hot vapor goes up in a column clear as glass, carrying salt from vaporized seawater, and silt from the sea bottom, and recondensed rock from the strike itself. At the limits of Earth's atmosphere it begins to spread in an expanding whirlpool.

"Megatons of live steam begin to cool. Water condenses first around dust and larger particles. What falls out of the pattern are the heavier globules of mud. Some join as they fall. They are still hot. In the drier air below, some water evaporates."

From LUCIFER'S HAMMER by
Larry Niven and Jerry Pournelle
Playboy Press, 1977

For the past three years these columns have been a joint affair: often Jim Baen suggests the topic and always we have a long telephone discussion before I write them. This will be the last of those. As I write this, Jim has left GALAXY to become the science-fiction editor at ACE Books. While I'm looking forward to working with the new editor, J. J. Pierce, I'm going to miss Jim, and I think so will we all. Thanks, Jim. I wish you well.

This topic was chosen before Jim left. There I was, admiring Larry's and my new book when the telephone rang and Jim asks, "Why don't you do a column about what would happen if a big comet hit the Earth?"

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"Uh—well, it wouldn't be hard to do, but are you sure the readers won't think I'm picking up a bit of free advertising?" I asked modestly.

"So what? It's an interesting topic, and I, uh, suspect you can do the research easily enough," said Jim.

"Done," I cried. And here we are.

* * *

First, what are the chances that any large object will strike the Earth? Secondly, if something hits, how great is the chance that it will be a comet?

High, in both cases. But that takes explanation. In any given century, any given millenium, the chances that we'll be struck by anything large enough to do more than make loud noises, and perhaps knock down a building or two, are *very* low. Death by meteor strike isn't exactly prevalent; I suspect that Lloyd's would insure you against it for a premium not much higher than the administrative costs of recording the policy.

In fact, in all history I know of only one person who has been injured by a falling meteorite, and she got her picture in *LIFE* as a result. (As I recall, her landlady wanted to claim the fallen star, on the grounds that it may have hit the tenant but it ended up in the landlady's basement.)

That being the case, how can I say that the probability that Earth will be struck is high?

Look at Mars. It's *covered* with craters. So are its moons, Phobos and Deimos. Now some of that is due to Mars' thin atmosphere, which doesn't protect the surface; but most of those holes in the Martian surface were made by globs that would have punched through our own atmosphere without hardly noticing. Mars has been battered throughout geological history.

But Mars is in the inner edges of the Asteroid Belt. Surely it gets hit more often?

No. Look at Mercury. Or Venus. Or our own Moon. It turns out that Mars' position in the solar system is irrelevant; all the inner planets, Mercury, Venus, Earth-Moon, Mars, have approximately equal chances of being struck.

And look at our globe: Vreedevort in South Africa, so large an astrobleme (a blemish caused by an astronomical object; nice word) that you can't even *see* it except from the air. Or Meteor Crater in Arizona, a kilometer-sized hole. And those were the little ones. Look at the globe again.

Circles. Hudson's Bay. The Sea of Japan. Two circles forming the Gulf of Mexico. The Bay of Bengal. Perhaps not all of those are astroblemes but it's likely that one or more was.

And of course there were myriads more but the scars have worn away over the ages. Our atmosphere is ef-

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ficient at erasing marks on the Earth's surface—and of course we're four/fifths covered by water so that not all the scars show to begin with. Over geological time we've been struck again and again—and over a long enough time we're bound to be struck. The probability is very high, given that we wait long enough. More on that later.

Now—given that we'll get hit, what are the chances that it will be a comet? High, of course; objects with intersecting orbits have had plenty of chances to hit and most of those that were going to have done so except for the comets, whose periods are so long that they haven't had many chances at us.

A number of highly reputable astronomers estimate that there are upwards of a billion comets. They're mostly way out beyond Pluto in what's called the cometary halo. Every now and again one gets perturbed out of its far-out orbit and falls down near the Sun.

Most astronomers think comets are dirty snowballs: various ices, water, methane, carbon dioxide, balled together and contaminated with dust rocks and general cosmic junk. When the comet gets close to the Sun—say, out there by Mars—it heats up. The ices turn to gas, and the gasses with dust stream out. Light pressure from sunlight pushes the tail away from the comet so that it smears across the sky. As the comet gets closer, more stuff melts, the tail gets larger, and it can become really spectacular.

Then, just as the textbooks show, when the comet rounds the Sun, the tail continues to be pushed away from the head; the light pressure works outward only. Thus on its way back out, the tail goes first: assbackwards through the solar system.

Each time the comet gets down near the Sun it loses all the gasses and dust that went into making up the tail. None of that can be recovered. Eventually there's nothing left but a few rocks.

As a matter of fact, as I write this, we're being hit by cometary matter. The Perseid meteor shower takes place this week (mid-August), and those camped out on the Mojave to watch the first free flight of the *Enterprise* got a spectacular light show as an extra attraction. The regular meteor showers such as the Perseids are generally if not universally thought by astronomers to be the remnants of comets in orbits with periods short enough to have brought them many times into the solar system. The ices have long since burned away, leaving nothing more than a mess of flying gravel.

Of course I don't recommend that everyone go make preparations for getting hit by a comet. (If you decide to do so, you'll get tips in plenty from the novel.) The chances that Earth will during your lifetime be hit by anything big are tiny indeed. Even over thousand-year

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periods the probability is not high. Our novel deals with the probable consequences of a very improbable event, and we didn't write it to scare anyone (well, we did, but you know what I mean).

But it is inevitable that if we wait long enough and do nothing about it, Earth is going to be hit by a comet.

So what? Comets are nothing more than dirty snowballs. Frozen gas can't harm us. Can it?

It surely can. Let's take a simple case, a chunk of ice one mile on a side. That works out to 4.17×10^{15} cubic centimeters; now let's choose a density. Liquid methane is .424 grams per cc; methane ice is more dense than that, but let's assume we have a lot of even lighter contaminants, so that our density is only half that of liquid methane, and multiply by .212, giving us a mass of 8.8×10^{14} grams, no small sum.

Now for a velocity. Let's assume the thing is going past and we whap into it at something like Earth's path velocity in orbit, about 25 kilometers a second. This is reasonable; the closing velocity of most meteorites that do hit our atmosphere varies from about 10 to about 70 kilometers a second. Using high-school formula, energy $= \frac{1}{2} mv^2$, we get 2.76×10^{27} ergs, a number that doesn't mean too much, so let's translate: It's 65,748 megatons, somewhat more energy than is contained in all the nuclear arsenals of all nations.

Put another way: It takes 980 calories to turn a gram of water into steam. If we assume the water started at the freezing point and that all the energy from the strike is used to generate steam, we'd have enough water vapor to cover the entire North American continent to a depth of well over 200 meters.

Fortunately not all that energy gets used that way but however you look at it, if our snowball hits water, it's going to *rain*. We put it this way:

"Cubic miles of water have been vaporized, and the rain clouds encircle the Earth. Cold fronts form along the base of the Himalaya massif, and rainstorms sweep through northeastern India, northern Burma, and China's Yunan and Szechwan provinces. The great rivers of eastern Asia, the Brahmaputra, Irrawaddy, Salween, Mekong, Yang-tze and Yellow rivers, all begin along the Himalaya foothills. Floods pour down across the fertile valleys of Asia, and still the rains fall in the highlands. Dams burst and the waters move on until finally they meet the storm-lashed salt water driven inland by waves and typhoons.

"As the rains fall across the Earth, more steam rises from the hot seas near Hammerstrikes; with the water go salt, soil, rock dust, vaporized elements of the Earth's crust. Volcanoes send more billions of tons of smoke and dust rising into the stratosphere.

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"As Hamner-Brown Comet retreats into deep space, Earth resembles a brilliant pearl with shimmering highlights. The Earth's albedo has changed. More of the Sun's heat and light are reflected back to space, away from the Earth. Hamner-Brown has passed, but the effects remain, some temporary like the tsunamis which still surge through the ocean basins, some on their third journey; hurricanes and typhoons that lash land and sea; the planetwide rainstorms that engulf the Earth.

"Some effects are more permanent. In the Arctic the water falls as snow that will not melt for hundreds of years."

Glaciers and a new Ice Age. Coastal regions scoured clean of life. Floods. New inland seas. Old Lake Bonneville, which once covered a lot of the interior of the US (and is now marked by some salt flats and the Great Salt Lake), comes back to life. And so forth. It's all described in our book, if you're that interested, along with what happens to the survivors.

But there's a point to all this and it's not trying to entice you to rush out and buy a book, nor am I selling survival kits.

The point is, it's bound to happen. Not this year, not this century, not this millenium—perhaps. There's no way of knowing. What did hit Siberia back in 1908? Black Hole? Comet? No one knows, but something did and it was big enough to have caused a *lot* of damage had it struck anywhere but in the most desolate area of Earth.

Has something like this happened in human memory? Probably not—but it's possible. Allow me to indulge in some speculation.

From about 1600 BC to 1200 BC a very high civilization flourished in Europe. It was centered around Crete originally, but something, probably associated with the eruption of the volcanic island of Thera seventy miles north of Crete, brought the Minoan civilization down.

Yet, despite one of the most devastating events in all history—the Thera eruption has been estimated at from four to ten times as powerful as Krakatoa, and Krakatoa killed thirty-six thousand people—the Aegean civilization recovered. The hundred-megaton volcanic explosion finished Crete but the mainland Greeks, led by the kings at Mycenae, rose as the Cretans fell. They took the Cretan script—known to archaeologists as Linear A—and adapted it for Greek. They had a highly organized economy dominated by the palaces. They traded all through the Mediterranean.

We know a good bit about how they lived from the Homeric poems. We can read the palace archives, find out just what the kings at Pylos dedicated to their gods, what measures they took for their defense; we can see their trade goods placed in Egyptian tombs. It was a high

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civilization indeed, and it lasted for a century after Thera. Then it fell suddenly. Within a generation, possibly a few years, possibly more quickly than that. Populations fell from millions to fractions of that.

And no one knows why. There are dozens of theories. Rhys Carpenter postulates vast and massive climate changes. The traditional explanation is invasion by barbarians. None of the theories are very satisfactory. None really explain why the art of writing was lost for centuries; why cities with massive walls and fortifications were deserted and never again occupied until their very locations were lost to memory.

Leon Pomerance of the Archaeological Institute of America finds existing theories so unsatisfactory that he has tried to redate the Thera explosion to 1200 BC. He has not gained much acceptance for his view; the Thera event can be dated in various ways but it's very hard to make it later than 1400; most put it earlier than that. There are the remains of Minoan settlements on the island and those can be correlated with a time in Egypt known to be centuries before the great collapse and the beginning of the First Dark Age.

Yet Pomerance makes one point very persuasively: No other barbarians in history have been so efficient at killing as these hypothetical people must have been to bring down such a great civilization. Not only did they kill off those arrogant Achaean warriors described by Homer but they destroyed a flourishing civilization in Phoenicia, wrecked Syria and then managed to do in most of their own people. Not a very satisfactory picture.

Others postulate an economic view: The palace economy was so tightly knit that once it was disturbed, the land could not produce enough to feed the swollen population; progressive decline set in and the Achaeans were their own "barbarian invaders." That view has its problems too: These progressively declining people were able to get around to a lot of territories.

But perhaps. However, there is another possibility, one of pure speculation: Phaeton. Recall the legend? Phaeton, illegitimate child of the Sun, asked his father a favor, and when it was granted, chose as his boon the right to drive the Sun chariot. The result was disaster, with the Sun getting so close to Earth that it scorched many lands; Zeus finally destroyed Phaeton with a thunderbolt and he fell into the sea.

Interestingly, Phaeton in legend has often been associated with devastating floods.

Could a large meteor have struck the Mediterranean just after 1200 BC, just after the Trojan War? At least the possibility is intriguing. Suppose it to have been a bit smaller than our cubic mile of methane ice and to have come in at a shal-

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low angle. It would have left a swath of destruction fifty miles on either side; that shock wave would be devastating.

When it plunged into the sea, it would throw up tsunamis great enough to scour the seashore. There would probably be climatic effects.

All pure speculation, of course. I offer no real evidence for the theory, nor do I care to defend it as anything more than a "cocktail party" idea.

I am dead serious when I say that worse inevitably will happen if we wait long enough.

In our story we have an event something larger than Phaeton; larger even than the cubic mile of ice. It's still pretty small compared to whatever happened to form Hudson's Bay or whatever cracked the Moon wide open a billion years ago. For obvious reasons we couldn't write a novel about that kind of disaster. It's hard to write about the survivors when you have a pasteurized planet. We were, after all, writing a novel. No one would want to read a fiction about the total end of humanity. That doesn't make the possibility any less real.

What might we do about it? Or are we all doomed, it being only a question of time before Earth is battered to death?

Well, first we can plant colonies. As Robert Heinlein observed last year on Viking Night, "Earth is too small and fragile a basket for the human race to keep all its eggs in." As I write this, there's joy in Palmdale: The Shuttle, despite Vice President Mondale's adamant opposition, has successfully flown her first untethered mission. About the time you read this I'll be at NASA Ames to participate in a symposium on space industrialization.

We can't plant colonies yet, but it may not be long. Incidentally, there arrived in today's mail NASA's publication SPINOFF 1977, all about new uses of space technology in everyday life. Mine was sent courtesy of the National Space Institute (1911 N. Fort Myer Drive, Suite 408, Arlington, Va. 22209; dues $15 yearly).

With self-sufficient colonies on Mars, and the Moon, and in space itself, we could lose the Earth and still survive as a race. John Varley has a series in which man cannot live on Earth any longer but hasn't got out of the solar system. And of course there's the possibility of recolonizing the Earth with survivors from the colonies.

But beyond that—is there any reason why space-faring man cannot save the home world? Given the ships and colonies, there is more than a possibility that we could quite literally push our nemesis off course. A few thousand megatons applied at the right time and place would do the job handily.

The next time somebody tells you we must give up technology in order to "save the ecology," think about that one. ★

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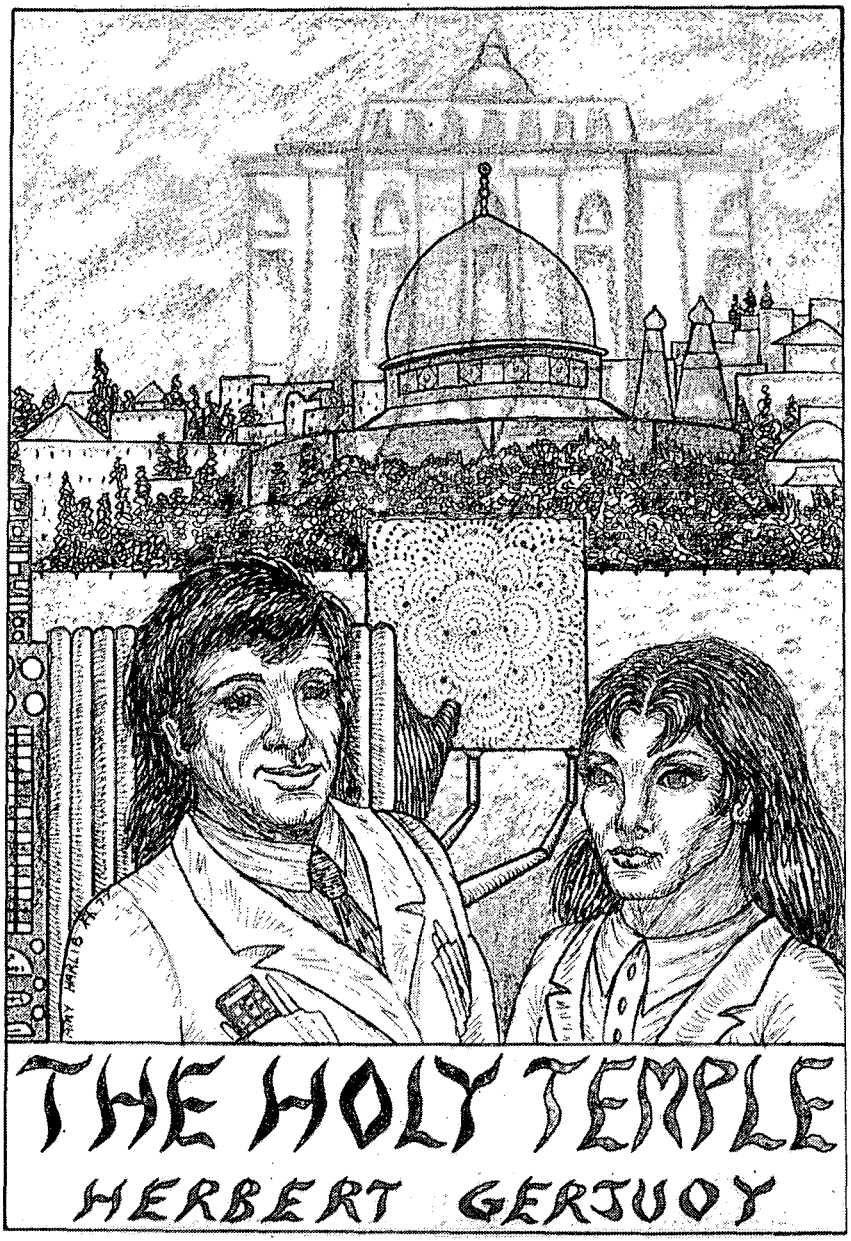

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A story guaranteed to offend *everyone's* sensibilities. Or hit their funnybones!

MY NAME IS ISAAC BENSON and I'm not Jewish. I'm a physicist and because of that name and my looks, most people think I'm Jewish. I don't do much to disabuse them because I have found that it has helped my career.

It's true that most people try not to be prejudiced, but it's not easy. When old Professor Levi, my graduate advisor, found out I wasn't Jewish, he tapped his index fingers together gently, the way he does when he is thinking deep mathematical thoughts. He peered at me from under those gigantic white eyebrows and said mildly, "But Isaac, some of my best friends are gentiles. You could have trusted me."

I knew, however, that old Levi, like so many other physicists, secretly believed that the heritage that gave us Einstein and Oppenheimer, Michelson and Weinberg and so many others was due to the fact that being Jewish gives a person a special added talent for theoretical physics, like the secret added ingredient in a new brand of floor wax. Anyhow, because of my name and because I am a slightly stocky thirtyish ex-boy genius with coal-black eyes, long thick dark hair and a prominent nose on my permanently lightly tanned skin, and because I have a vestigial tendency to observe the Sabbath (I'm a natural-born Seventh Day Adventist), only my close friends know I'm really not one of the Tribe.

Oh, yes. I also love to drink. My Jewish friends (and what other sort does a theoretical physicist have?) tell me that that's how they can tell I'm really not Jewish. They all seem to prefer stimulants, like caffein, rather than nice soothing depressants, like alcohol, that quiet the sullen voice of conscience and let a fellow have some fun once in a while.

Alcohol does something else for me, something I really need: It stops the endless flow of invention ideas. Since I was a little kid wandering around the campus of Atlantic Union College (where my father taught mechanical drawing), I've been plagued by a psychic diarrhea of ideas for almost always absurd inventions. It wouldn't be so bad if I could think up nice practical schemes like how to solve the energy crisis or make a self-changing diaper. Instead, a typical hour's production may include a plan for correcting software errors in a computer whose circuits consist of plasma created by holographic replication of the plasma, a way to improve the long-range carrying power of cockroach sex attractant, and a way to tell how many days ago spoiled yogurt started to spoil. I

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admit I've cheated a bit; these ideas actually came to me this morning over an interval of about three hours. There were, of course, during that time dozens of others. I chose those three because they show how nutty my ideas tend to be, and how varied.

By now I've learned just not to listen to all those ideas: I can't turn off the damn station but I can tune it out, more or less. However, I am convinced that tuning it out takes some sort of psychic energy. That's where my love for alcohol comes in: When I am sufficiently drunk, the ideas stop. Then of course I become far more intelligent because I am not exhausted and distracted by all that subjective clamor.

I've tried to control the subject matter of my inventions. I can't. The only time the system ever got focused was for two terrible weeks when I was fourteen during which I must have come up with hundreds of ideas for aphrodisiacs for women and anaphrodisiacs for males other than myself. Every idea would have worked—given money, technology and raw materials utterly beyond reach. If I get sent to hell and they put me in that desert where the water is always just out of reach, I'll just laugh. After my experience, age fourteen, I've been understandably very, very tentative in my later efforts to focus my talent.

Anyhow, toward the point of my story—if not exactly to it. One day I did have an idea that seemed worth following up, an idea that looked like it might help solve some of the big differences between Israel and her Moslem neighbors. It also would provide an important practical application for the relatively pure branch of experimental physics in which I had specialized (mostly because Levi was the biggest shot that would take me on as advisee).

My specialty was the theory of large-scale holography. By large I mean fractions of a kilometer you can write with only one decimal digit in the denominator, which puts a lower limit of one hundred eleven meters. When holograms get that big, there is a whole new class of problems to contend with that cannot even be measured, let alone noticed, in traditional teeny-weeny holograms. In my new, large-sized range you have to worry about variations in the earth's gravitational field disrupting wave-front register.

My idea was for a way to create a giant hologram that could be turned on and off by the flip of a switch. It was a practical way: That is, it could be built for not much more than three or four billion bucks. And I saw a splendid application.

Why not make the holy Temple in Jerusalem by hologram? Why not project it over and around the present Mosque of Omar? In fact, that structure could be integrated into the structure of the holographic projection so that the walls of the

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Mosque fitted with the walls of the imaged Temple.

Imagine! The Temple could be turned on for the Jewish Sabbath and holy days. It could be turned off at other times. There need be no destruction or damage of the present Mosque. In fact, several different holograms could be projected by the same projection system, including versions of the Temple designed to fit various alternative sectarian views. There could be a Catholic Temple, a Reform Jewish, an Orthodox Jewish, a Babbist, even a Marxist Temple designed to look shabby and tawdry. What a way to satisfy everybody! The ancient prophecies could be fulfilled. Every ancient prophecy, including all contradictory ones!

Of course, with my background, I didn't have immediate access to anyone in a position to implement my idea. My Princeton friends were too—shall we say—secular; certainly no one I had hung around with during my freshman year at Atlantic Union College could possibly have the right connections.

Therefore I worried about how to find someone to help me implement my brainstorm for three interminable seconds before I finally thought of my mad-genius friend, Leonard Bachutz.

Len Bachutz had been a fellow graduate student in physics at Princeton and we had even published a paper together—a lovely theoretical proof of an obscure astrophysical speculation by Lyman Spitzer—before we became too absorbed in our doctoral researches to take time for something as frivolous as publication in professional journals.

Len was generally regarded as the most capable graduate student in our class. Maybe not another Weinberg, but definitely an order of magnitude more talented than the rest of us clods. The legend was that he and Levi used to lock themselves in Levi's lab late at night and summon up the ghost of Oppenheimer. Levi is a staunch exponent of the fundamental indeterminacy of quantum processes, and hence the fundamental unpredictability of everything. Oppenheimer, as everyone knows, followed Einstein in believing that underneath the chaos was a strict, predetermined order. Naturally then, the story went that Levi and Bachutz would summon Oppenheimer's ghost just to taunt him with the question: "If the universe is perfectly logical and predictable then what are you doing here?"

I'd better interrupt myself here to explain to the reader that the last paragraph was a joke intended to show the awe that the other grad students felt concerning Len Bachutz. It wasn't my way of introducing you, dear reader, to an imaginary world in which ghosts are real. In fact, there is not a bit of unfounded speculation in my story. Every bit of the science and

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technology is sound—as solid, I was tempted to write, as a holographic projection.

Len never got his degree, however. First he got involved in a complicated generalization of the eight-fold way. As you probably know, Tom Ching eventually got the Nobel prize for generalizing the eight-fold way. What you probably don't know is that Tom Ching and Len Bachutz worked together on the original mathematical formulation of the higher-dimensional equivalent of two-cubed.

Then, without ever completing the part of the report he had promised to write, Len suddenly went off on a completely wild tangent. He rediscovered some obscure medieval speculations from the Jewish Neo-Platonists that he felt constituted a detailed description of the big-bang beginning. From there he went to the Kabbala, an esoteric collection of obscure Jewish mystical writings that were, so he told me, the latest thing around the beginning of the thirteenth century. For some reason Len decided that they made a great deal more sense than anyone had thought for the last few centuries. He believed that all it needed was translating the medieval mummery into modern mathematics and, lo, we would have a free, unified field theory—without having to do the work of deriving and developing it!

Of course no one around Princeton would even talk with him about that kind of madness. The more Jewish the physicists he tried to interest were, the less they wanted to be reminded that their ancestors had gotten into philosophical tangles as complicated as those that made Christian scholasticism the charming nightmare it is for the modern scholar. Maybe the Kabbalists didn't worry about how many angels could dance on the head of a pin (actually, a perfectly sensible attack on the problem of degrees of infinity), but they had their own mind-bogglers. Len once told me that there had been a great deal of investigation of the ultimate shape of the universe. I think he said that it was probably that of a man and a woman embracing. I remember he got annoyed when I asked him how close the embrace was (the Big Bang, as it were?) but I'm not sure whether the idea about the shape was his own or came from a medieval source.

Anyhow, Len dropped out of Princeton and went to live in Boro Park, Brooklyn, where there is a sort of settlement of very traditional Jews. There are streets there where everyone seems to be dressed up like members of an Amish community; the men in long black frocks; the women in heavy, shapeless, long dresses, with their hair hidden under wigs or bulky hats. Maybe I'm not getting the details of their dress exactly right but you get the picture.

Len went to live there so he could study the old lore with the

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masters who have made it their life's work. I visited him a few times in the first year of his exile, but then we drifted apart. Each time I went to see him, he seemed to be deeper into that weird backwater society, and it was clear that he was increasingly hooked by the religion. Maybe he started off simply wanting to learn about their theories about the nature of the universe, but after a year he was praying and beating his breast—or whatever they do—with the most devout of them.

Nevertheless, he had kept up his membership in the American Physical Society, and once in an ultramarine moon he would send a brief, tightly reasoned note to *Physics Review Letters* with an esoteric topic such as a Machian approach to accounting for the spacing of quantum shells in the nucleus, or an information theory interpretation of entropy as applied to the distribution of charge in a hypothetical linear force field.

I figured that by now, some seventeen years since he left Princeton, he must have the contacts I needed to try to implement my idea about the holographic Temple.

"Interesting," he said, smiling slightly, after I had explained myself. We were sitting in his study. It was lined from floor to ceiling with heavy old books whose covers indicated they were in Hebrew or Yiddish or whatever it is that uses that crinkly alphabet. He lived these days in a fourth-floor apartment—no elevator—in a beat-up old frame building. From outside the heavy oak door of the study penetrated the pandemonium of a small apartment containing seven children who were forbidden to watch television (too much corrupting influence). His wife looked pretty healthy to me, but I had to wonder whether tranquilizers are kosher.

He thought a little and then opined in that smarmy voice he had cultivated since he got religion: "It says somewhere—I'll have to try to track it down—that when the Temple is rebuilt, its walls will be walls of fire. That's encouraging. Of course you're not the Messiah and He's nowhere in sight so far as I know, and that's not encouraging. Still, if you want to try, why not? It also is written that if the world is sufficiently evil, then the fulfillment of the prophecies will seem to be the action of purely natural forces, and that will be our punishment since we will not know the joy of witnessing His miracle. Maybe you are the natural instrument that will fulfill the prophecy." He chuckled and continued in a voice more like a physicist and less like an apprentice saint, "It seems to depend more on my mood than on anything that happens out there, but the world becomes, from time to time, quite evil. Other times it is rather good, all in all. We have a paradox. It was quite evil this morning, until you came here to visit me, old

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friend. Now the world is getting better and better, in which case I'm afraid there's not much hope for your idea. You had better go away and try to get help from someone else. Then I'll be able to help you."

I just sat there. I knew that I would have to survive two or three such logic mazes before the conversation turned serious.

After a while Len said, "I know a man in the Knesset who should be able to help you. He has contacts in the Israeli government and the PLO."

"Hunh?!"

"That's right. The PLO has been smuggling refugees into Israel at a hundred dollars a head. The PLO gets some much-needed cash for which they don't owe Russia, Saudi Arabia, Libya, or anybody anything. The Israelis are delighted because they need manpower, and even if they have to pay the whole hundred dollars a head—and they rarely do—it is still a lot less than it costs them to get someone out of Russia.

"It's essential, of course, that the arrangements are not ruined by an unfortunate choice of a time and place to conduct a little practice raid or artillery duel. Therefore, someone has to tell someone to tell someone to tell someone. My friend is second someone from the right. Of course, in Israeli politics that still puts him well to the left of our Democrats."

"I don't understand you."

"That's okay. I'm just joking. But really, I do know the man you should contact. He does have contacts with both the Israeli government and the PLO."

"Len, you're amazing."

"Call me 'Aryeh,' please."

* * *

And that's how I came to be flying to Israel, with a letter by Len in my pocket introducing me to Dr. Shimshon Kafsi, a physicist who used to work for some sort of secret Israeli project but was now a member of the Knesset, representing an obscure minority party whose principal platform plank appeared to be a crash program of government-sponsored experimental theology: how many prayers to Jehovah cancel how many prayers to Baal—that sort of thing, I think. Kafsi, in turn, was supposed to introduce me to someone else who would be able to introduce me to the right person in the Arab world.

As I sat there in the late afternoon twilight forty-one thousand feet above the Bermuda triangle, my knees cramping me the way they always do when I have to sit still for a long time, I watched several young men dressed in the Orthodox Jewish uniform sway and mumble in the aisle—saying their sunset prayers, I assumed. Lazily I fantasized a hijack attempt I would foil, earning the intense sexual fa-

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vors of the cute little hostess. I took out my little pocket memo pad and made ready to note down any interesting invention ideas—my last-ditch fallback defense against utter ennui.

I got stuff like: A way to make color television three-dimensional for under twenty-five dollars of retrofitting per set, provided the viewer is totally red-green color blind; how to stabilize trojan orbits near binary black holes; a cheap way to prop up the Colossus of Rhodes, using technology available at the time it was standing. A typical series of invention ideas. Suddenly, however, I had an idea for a sort of digital-analog hybrid that would speed testing of possible proofs of Fermat's Last Theorem. Now that *was* interesting!

I began writing complicated equations on my pad, using a combination of Arabic, Greek, Roman and Hebrew orthography to permit me to distinguish all the different (and different kinds of) elements that had to be represented. The cute little hostess leaned over to see what I was writing, and I inhaled pure essence of rutting musk ox or sexually deviated sperm whale. It was all I could do to keep from doing all I could do. "What's that?" the dear girl asked.

"I can't tell you," I answered. "It's a military secret. I'm an American who works for the Israeli government—on loan, you know." (I think I forgot to mention that the plane was an *El Al* 747—I like their more thorough security searches.) "This is important mathematical work related to an important project. I imagine it's safe to tell you this much because anyone who is crew on one of these flights must have been cleared before being given anti-hijack training, but I really have to ask you to forget even this much." I tried to look very clever and competent. The inventor of a fountain-pen atomic bomb.

Well, folks, that smart-ass reply of mine both saved my life and almost led to World War III. I'm glad about the first result of my dishonest boasting, and I'm really, truly sorry about the second—except that I do have a trace of smug satisfaction that the Big War didn't erupt—and maybe it became a little less likely that it ever will.

I'm getting ahead of my story though, so let's get back to the next few minutes up there in that *El Al* jet. You've surely figured out by now that I was on the famous Flight 400. Pay attention. I'm about to tell you what really happened.

The cute little hostess blinked twice. Then she said, "Let me bring you some juice—or would you prefer some other beverage?" I noticed that for some reason her lower lip was trembling slightly.

"Orange juice will be fine," I answered. I had intended to add that a man with as important a mission as mine had to drink only healthful beverages, but before I could finish

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my sentence, she took advantage of the pause before the start of a new clause and darted off down the aisle as if bringing me orange juice was the reason she had been given such cute little feet.

However, once she disappeared into the 747's galley, she never came back. Ten minutes dragged by. I drifted from the fantasy about how she would show me her admiration to the one about rescuing her from the escaped mental patient holding her in the galley with a bread knife. (Do they have bread knives in the galley? I doubt it—after all, the bread is pre-cut, isn't it?)

Suddenly a man's voice spoke on the plane's announcement system. "Ladies and gentlemen," a very deep voice began, speaking with a distinctly foreign accent—later I discovered it was German. "This is Captain Ishmael speaking. I hope that you have been enjoying your trip and that the remainder of it will prove even more enjoyable and instructive. I must announce a slight change in itinerary, however. This plane was scheduled to proceed directly to Tel Aviv. However, it will prove necessary to make a stopover in recently liberated Palestinian territory."

That was how we found out we had been hijacked. Captain Ishmael continued: "There will be several hours before we reach our destination. During this time the normal services of this plane will continue. However, no passenger will be permitted to leave his seat without first securing permission from the crew, one of whom may be summoned by pressing the call button. Any individual who disobeys this simple and reasonable regulation will be assumed to be plotting mutiny and will be dealt with by summary execution. Of course no sensible passenger is in the slightest danger because this one simple regulation, which we must enforce for the sake of order, is so easy to obey and so natural and obvious that there will be no need for concern by anyone not planning a mutiny. Please note that as of now, *we*, the Twentieth of June Chapter of the Mosque of Omar Division of the Free Palestinian People's Army, are the duly constituted authority on this vessel in international flight, and any effort to seize control of this vessel from us is air piracy and subject to its well-known condign punishment.

"Preparatory to our landing in Free Palestinian territory, there must be routine customs and visa inspections and interviews. To obviate needless delay after we land, and so that you may promptly leave the plane if you wish to do so during our stopover in Free Palestine, we will interview each of you while we are in the air. When you hear your name announced, rise promptly from your seat and come down the aisle to the crew station next to the galley where the soft drinks are

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stored. A crew member will meet you there and give you further instructions.

"To begin with, will Mr. Isaac Benson please come up for his interview?"

When Captain Ishmael mentioned the Mosque of Omar, you can imagine how excited I became. I felt like jumping up and cheering or maybe kissing that cute little hostess with the pheromone-charged perfume (who was actually not in sight at the moment—maybe that's what stopped me). Then, when I was called for first, my mood flip-flopped into total terror. Bravely I collapsed into a little heap of wriggling spineless invertebrates. Put simply, I fainted.

When I came to, I was lying on my back on the floor of what was obviously the galley. The cute little hostess was stretched on top of me squeezing and rubbing the back of my neck with her right hand while she massaged my right kneecap with her left hand.

"Welcome back," she whispered conspiratorially. Then, maternally (my mother is a nag): "Do you realize you've lost your turn! That was a really risky thing you did!"

"Listen," I whispered back, "I lied before. I'm not involved in any secret project for the U.S. government or the Israeli government or anyone. I'm just an inventor on my way on a business trip to try to sell my latest invention." I tried to look as frightened, inadequate, stupid, blundering, bumbling and schnooky as I felt.

Her eyes glistened. She put her arms up to my shoulders and drew her lips to within two-and-a-half air molecules of mine. Our lips were so close, the electrostatic forces made it seem as if they were touching. "I thought you would be this brave," she whispered huskily in a voice that was the perfect sound equivalent of her perfume. It is a tribute to my youth and excellent health that I noticed this. It is a tribute to my terror that I didn't care.

"No, really," I whispered back, "I'm really just a schnooky inventor!" I suddenly remembered to stop whispering and added in a shriek appropriate for either the situation I was in or a try-out for the role of the second of the Three Witches in *Macbeth*: "I'm *not* working for the Israeli government! I'm *not* working for the American government. I don't know any military secrets!"

"That was very resourceful," she said thoughtfully and—if possible—more admiringly than ever. "Now the whole plane knows you're an Israeli agent. We'll have to be careful to treat you well until we get you away from the others. Then we'll have to break your resistance quickly, to help counter the myth of Israeli invulnerability."

Even in my terror, which by now had reached the abject physiological level of imminent danger that I would wet my pants, I was struck

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by a major anomaly: "How come an Israeli stewardess is working for Arab hijackers?" I blurted.

She answered in roughly the tone of voice the fifth-grade teacher's pet used to use when she told her friends why she had ratted to the teacher about the firecracker under her desk: "I'm a deep double agent."

"Hunhm?"

"Like every responsible government, the Israeli government plans for every contingency. Just in case the Arabs win, we have a certain number of agents planted in the Arab camp. Even if all other Jews in the world are exterminated, we handful of quislings will keep the Faith alive!" She smiled smugly.

It occurred to me that there was no reason why she should be any more truthful with me than I had been with her. To my total astonishment, I heard my voice say, "I find you very attractive." I then felt my face smile—engagingly, I hoped. From the inside it felt quite forced.

She whispered, "I find you very attractive, too. I think it is your bravery. I think that if you could find a rationalization for joining our camp, we would become lovers. Very good lovers. Very close lovers." Her perfume sent little prurient organic pimps and panders scurrying up my nasal passages to infiltrate sneakily through the myriad holes in the bony plate between the nasal sensors and my brain. I listened to an intoxicated slice of brain think that it would be worth it if I were killed for raping her. I firmly (not too firmly, I hoped) told myself to stop that kind of stuff.

Sternly, I told myself that all I would do would be to put my arm around the girl. That was just friendly, that's all. But when I did it, the way her magnetic poles brushed against me gave me an idea. I kissed her. That seemed to increase the magnetic field and gave me another idea. . . .

* * *

The dark gent in the burnoose didn't really try to keep the rifle pointed at me. "People are always more suggestible right after orgasm," he said with a smile, sounding sneaky because of the way he hissed his esses.

"Whom are you trying to suggest?" I asked, "Me or her?"

He laughed soundlessly. He was a short, dark man who appeared to be about twenty pounds underweight. He had the kind of face that is best described as foxlike to anyone who is familiar with what foxes are like. Since I'm not such a one, I would get the picture of his face better—if, that is, someone else had to describe it to me—if it were described as crafty looking, triangular, with a tiny mouth over a little sunken chin. He looked like one of the bad guys in a movie that doesn't have time

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for characterization and has to rely on stereotypes to identify who's on which side. I have always hated such movies and such stereotypes. Besides, I was in a good mood. I decided to like him.

"I'm not any kind of agent. I'm a dumb inventor. I'm on my way to Israel to try to sell an invention. I'll tell you all about it. It has absolutely no practical value whatsoever. I've simply invented a way to make giant three-dimensional projections—images—of things. I could make a three-dimensional image of a house and it would look absolutely real. You could walk around it and see it from all sides. But it would not shelter you from the rain. It would just be an image.

"My idea is to use my invention to project an image of a reconstructed Temple in Jerusalem. My kind of three-dimensional image can be turned on or off by a flick of a switch. I expect each of the different religious groups in Jerusalem will want their own image to fit their own beliefs about what the Temple was or should be like. The Moslems could have their own image or images too, you know."

"How do you keep such a large wave front collimated?" he asked.

"You can't do it without feedback," I answered. "You need sensors located out at various distances along the line of the wave front's progress. The light input is converted to electrons that move down a path through a flawless metal crystal. In effect, the light signal triggers a signal several orders of magnitude higher in frequency and therefore capable of measuring the time of arrival of the light with very great accuracy. The electrons trigger a moving wave of surface charge shift along a long, thin metal filament. It's something like a neural impulse. The surface waves from each of the different sensors that are supposed to receive simultaneous signals converge on a single junction that is similar to a neural synapse at which several neural axons converge. If the timing of the different signals is even slightly off, they fail to synergize to produce a sufficiently strong momentary potential surge to trigger a response in a condensor plate that constitutes the equivalent of the next neuron in the network. In effect, the system acts to magnify tiny errors in simultaneity, that is, collimation. Then a feedback circuit adjusts the collimation by focusing a standing ultrasound wave on a transparent helium medium through which the light passes as it leaves the laser source. The variations in density produced by modifying the focus of the ultrasound act to adjust the speed of the light wavefront by just the proper amount."

"But how do you take into account noise in the transmission of the error signal, or in the system that generates the correction?"

I didn't think to wonder how come he knew enough physics to

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ask the right questions or how come he was catching on so fast. I tend to think that everyone knows everything. That's one of the reasons my inferiority complex is such a splendid specimen. I am really very proud of it.

"The feedback makes the proper correction," I answered, "except for certain dangerous resonant frequencies. The system is so sensitive and so fast that its resonant frequencies are up in the soft X-ray range, much higher than light frequency, and so a light signal is hardly ever appreciably damaged."

"How fast does that surface charge effect travel? It can't be very fast. Doesn't that make the whole system very *insensitive*?"

Just then I was suddenly reminded that Shaya (the cute hostess) was still lying next to me—rather, behind me, with her body pressed against my bare back. She reminded me. She did it by suddenly biting my shoulder, I gave a little yelp and squirmed away from her, banging my head against the metal side of the galley soiled-dish receptacle.

While I was massaging my head and my shoulder and wishing the cute little hostess would do it, the dark burnoosed one with the rifle spoke a short, angry-sounding phrase in a guttural language, and the c.l.h. scooted out of there toward the front of the plane, not even stopping to slip into her shoes.

"I am glad you have decided to cooperate," the d.b.o. said. "It would have been a great propaganda coup for the Israelis if they had been the ones to spring the surprise appearance of the new Temple. Now we will provide the surprise."

"Why can't everybody do their own thing?"

"No doubt, eventually, all surviving actors in the little drama will get the chance to display a suitable Temple, but there is no need that all do so equally promptly. It will be far better for the future peace and stability of the world, let alone this region, if we put on our show first." He smiled. He had too many teeth. I decided that maybe I should stop liking him. On second thought, I decided to try as hard as I could to like him, at least as long as he had a rifle and I didn't. In fact, even if we both had rifles.

He smiled even more broadly, showing some shiny steel where his molars grew like a coral reef. "We wondered if you would reveal yourself. You are a very sensible, very wise, very adaptable man. Perhaps you would like to use the next few hours before landing preparing a list of the supplies you will need. We may have to order some and we are in such a hurry that even hours may count. You have never had the luxury of the kind of support staff we will provide you. If you give me your list, I will radio ahead and we will be ready when we land."

I realized that somehow I had been expected. It must have been

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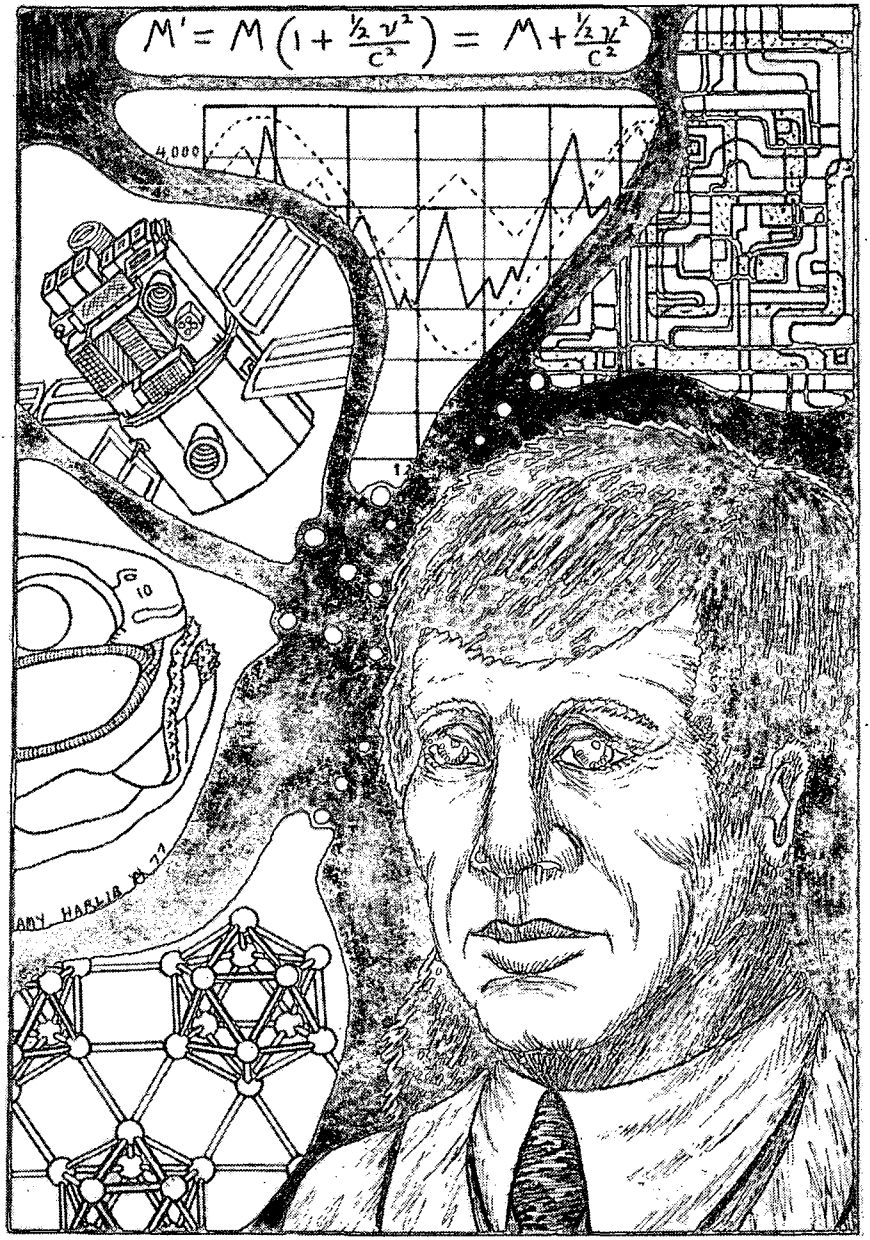

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some message from Aryeh (Leonard) that had gone astray. It seemed to me that I would be betraying my good Jewish friend if I cooperated with these Arabs but I felt that it would be better to betray him than to betray myself by getting myself killed. I would try to make it up later, maybe by contributing to the Jewish National Fund.

I gave him a list of equipment and supplies. I made it as long and expensive as possible. If in doubt, I asked for the more expensive and complicated component rather than some simpler, cheaper alternative. He seemed delighted with the list and his glee seemed to grow with the growing cost. "Now I am sure your device will work," he said. "Nobody would have built something remotely like it if he did not know precisely what he was looking for."

"Nobody ever has. I haven't. Did you think I had?"

"Oh, no!" he reassured me. "But I did worry about why something like your idea hadn't been tried before. I think that equipment will run close to half a million dollars. That's very encouraging."

I tried to think of some big extravagance to encourage him enough to put down the rifle but I seemed to have run out of inspiration—until: "And I'll also need five assistants, all of whom have or almost have doctorates in appropriate areas of physics and engineering."

"Physics *and* . . .?"

"I meant 'or:' "

"If 'and' would be better, I'm sure it can be arranged."

For the first time I grasped the implications of the increase in the price of oil.

Three weeks later I began to grasp the implications of the implications. We had landed at an airstrip next to an oasis in the middle of a desert. For all I knew, there was a town just beyond the second sand dune from the right, but there was no sign it was there. Nevertheless, by helicopter and by giant transport plane, people and equipment came pouring into Angry Shah, the name I had privately given to wherever we were. After about a week the other passengers and the crew had flown off. I never did get close to Shaya again. I wasn't exactly an honored guest, or the boss of the project, or a prisoner. I was all three, plus a lot of other stuff I couldn't readily label. My hosts were spending money as though it were about to go out of style. (With the great inflation of the eighties going full blast, I guess they may have been right.)

The upshot was that that morning, three weeks later, I was standing next to the portable blackboard in the command tent. Seated around the teak conference table were four of the world's top ten experts on the engineering or physics of holography. I strongly suspected the missing six were Jewish.

"Gentlemen," I said (thinking

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that "Whores" would have been a more accurate collective characterization and probably "Fellow whores" would have been better yet), "then we are agreed that we'll have the first megaholograph ready for demonstration in fifteen days."

Dr. Takashita, a quiet little man with graying hair and a pencil-thin moustache, said, "Calibration." That was about forty per cent of his daily syllable ration so I avoided asking him to explain. I had learned to think about whatever he said before I asked him to say anything more, which was, I suppose, the main reason for his communication style.

"I assume that the calibration will be complete by the end of the week. Today is Monday. That means Friday."

I looked around the table, searching for disagreement, hoping for agreement. As usual, they looked alert and intelligent but avoided giving me much of a clue. I took the desperate step again: I thought.

"Let's see, if we have to get the calibration done, we first have to get all the equipment solidly anchored. That means we have to calibrate the vibration and shock-measuring equipment. That means we have to anchor *it*. Well, we have today's assignment defined for us."

For once things went without serious hitches. By Friday we did have everything calibrated. We had decided to use, for our first image, something that could be briefly mistaken for a real object but that could not possibly fool an observer for any length of time. Therefore, we would project a grove of palm trees that grew near the well near the center of the oasis. At first glance it should look real but it would betray itself when the trees did not move with the breeze. (I know. What about dead calm? We decided not to try the experiment in a dead calm.)

* * *

Saturday was spent setting up our laser equipment all around the palm-tree grove. Sunday we spent getting hijacked.

The attack started just before dawn, I am told. I was, of course, in the sack. The first I knew, there was the sound of machine-gun firing from somewhere outside my land cruiser. I sleepily assumed that some of the Arab guards had gotten drunk or high and were whooping it up. Since the only women at our camp were some elderly cooks and Senora Lupe Arrau-McBride, our sixty-eight-year-old Chilean expert on wave-front polarization diffraction, I had been expecting some sort of hell to break loose.

It must have been no more than two minutes later, however, that three armed men burst into my room. They were dressed like Russian air-force officers (at the time all I dimly gathered was that they

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looked like some sort of Russian military officers—red stars, you know, do kind of suggest that). They all carried smoking machine guns. The first man in, who looked in the dim light to be about twelve, said in unaccented English, "Get up, you ass-kissing quisling Arab-loving fairy, or we'll blow your brains out faster than your Arab friends could blow anything else." Notice the absence of any exclamation mark at the end of that sentence. He said it quietly, easily, as if he usually said sweet things like that when, as he did several times a day, he burst into a man's room carrying a smoking gun.

My reaction was to swallow a big gulp of spit and phlegm and start to choke. I doubled up, all tangled in the sheets, parts of my naked anatomy sticking out obscenely while other parts convulsively wove the sheets into a straitjacket woven around and between my arms and chest and back. I coughed and strangled and my heart palpitated with a mixture of terror that any moment they would shoot me in the precious parts of me that were exposed and terror that they would simply stand there and watch while I choked to death. It seemed like a singularly embarrassing way to die.

Suddenly I felt hands grabbing me under the knee joints. I was jerked out of bed and out of the bed sheets with such force that a sheet flapped against my chin with a loud *snap*, damn near knocking me out. I never had time to hit the floor with my head because two other arms grabbed me under the arm pits and I was swung face down across the back of one of my friendly visitors.

You won't believe this. I was still coughing and choking. Guess what I thought: I was so confused and crazy that my only thought was that it was a lucky thing I was naked so they could see definite proof that I didn't find riding like that on a man's back exciting. I lay there, half choked, and felt pleased that they would soon surely decide they had maligned me by calling me a queer!

We started out of the tent. I could still hear plenty of shots being fired in the background, also quite a bit of screaming and moaning. There was a lot of flickering light; evidently a good deal of the camp was burning. I smelled a terrible roasting smell that would have been delicious if it had not seemed likely that it was coming from what I was afraid it was coming from.

Suddenly there was a burst of light, then everything went black.

They told me later that my coughing was driving them nuts, and besides, it seemed likely to draw fire from somebody. They half suspected I was doing it on purpose—a very clever trick, they thought—and so they gently conked me on the head with a machine gun.

Once again I suffered from overestimation.

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It is a miracle I didn't die of choking while I was unconscious, but perhaps the way they were carrying me with my head lower than my chest saved my life by promoting drainage.

I awoke in a hospital room. Now remember, the men I had seen were wearing Russian-type uniforms. Naturally I assumed I was in Russia. When I opened my eyes, there were two nurses and a doctor—or so I perceived the situation; later I learned otherwise. But when I first saw the three white-suited persons next to my bed, it was a natural assumption.

In English that had the faintest trace of an accent, the doctor said, "You were not seriously injured, Mr. Benson. You are in a hospital only as a precaution. After we perform a few simple tests to make sure we haven't overlooked anything, I plan to release you. That will probably be in a few hours." He smiled. "It is a pleasure to meet you, Mr. Benson," he went on. "Let me introduce myself. I am Doctor Sapir. This is your nurse, Miss Kessef. The other lovely lady is a medical security officer, Lefenant Dagell." Note that he pronounced the military title the British way, with a "left."

The names didn't tell me much. They didn't sound particularly Russian but this was a very small sample. The doctor was slight, aging, rather dark-skinned, with black eyes and hair. His face was wrinkled, his cheeks sunken, his facial bones prominent. The women were both twenty-ish, smiling, wearing no lipstick, black-haired, dark-eyed, attractive, slender. One was olive-skinned, the other very light.

I took a direct approach. "Where am I?"

"In a military hospital not far from Tel Aviv."

The Russians weren't going to fool me that easily. I had been one of the few loyal fans of the television series, "The Prisoner," in which a determined man escaped again and again from a diabolically complex trap, only to be caught before the end of the program so that the next show could give him another opportunity to escape. Besides, I am as paranoid as anyone you might care to compare to me.

"How soon can I see an American Embassy official?" I asked slyly.

Leftenant Dagell answered, "The embassy will be notified immediately if you wish, and they will probably send someone over right away. But can't we persuade you to wait?" She smiled sweetly.

I knew that, of course, there would be a well-trained agent who would impersonate an American consular official. It seemed to me that my best strategy would be to appear to be fooled. At all costs I wanted to avoid the brain-washing drugs and torture that would be my fate if my captors knew I saw through their clever masquerade.

"Why should I want to wait?" I

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asked, trying to sound dumb and innocent, and hoping I would do a better job of it than I had done earlier when my Arab friends had hijacked the *El Al* 747.

"We need your help with the giant holographic projector we are building," Lt. Dagell explained. Her voice and manner were military—crisp. She made me feel as if I had been late returning a library book. She didn't sound as if she needed anyone's help with anything.

"How far along are you?" I asked, cleverly probing for information.

"We have duplicated what the Arabs did for you at Wadi Qatar." Her pronunciation of the gutteral "q" was splendid. I felt sure that the leftenant always had a perfectly clear throat; she could probably flip a speck on her soft palate twenty feet against a stiff breeze.

By the way, she was the light-skinned one. Her hair was straight, short, severe. So were her eyebrows. I never saw a woman without horn-rimmed glasses who gave so powerful an impression that she was wearing them.

"I'm surprised you want help from a 'quisling Arab-loving fairy,' " I said, sounding sincerely hurt; I still resented the unjust accusation.

To my surprise all three burst into laughter. "Our psychologists triumph again!" Dr. Sapir said, obviously forcing himself to keep from guffawing some more. "They assured us that if our men recited that accusation when they came to get you, you would become too upset to resist—just in case you wanted to.

"Please accept our apologies," he went on. "We have no reason to believe you had that sort of intimate relationship with your Arab captors. By the way, did you?"

Later I learned that this was Dr. Sapir's way of being funny but at the time I was not amused. However, since I wasn't Queen Victoria, and since I didn't want to come across like any sort of queen anyway, I decided to be polite and calm despite the insult. Besides, remember, I assumed that my three friends were not above little expressions of affection—like an Iron Maiden.

"I cooperated with my captors because I'm apolitical," I answered. This time I didn't try to sound stupid. It was hard enough trying not to sound priggish. "My one aim in life is to see my invention of macro-holographics demonstrated. I'll be glad to help you build the necessary projector. However," I went on, "it would certainly make me feel more like the guest of a civilized nation rather than the prisoner of a gang of bandits if I could see an American consular official and if I could come and go as I please. I certainly have no reason to run off, at least not until the macro-holograph projector is completed."

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"We'll drive you into town to the American Embassy this afternoon, provided the doctors here check you out," Lt. Dagell crisply assured me. "If you can't leave the hospital, we'll arrange for someone from the embassy to come here."

"I think you'll be able to leave in an hour or two," Dr. Sapir said breezily. "Our mutal friend, Rabbi Bachutz, tells us you are virtually indestructible."

"How would he know?" I was impressed with the effectiveness of Soviet intelligence.

"He says that not only are you smart and creative, you're also lucky."

That sounded like Leonard! Could it be that he was actually a deep-cover Soviet agent? Could his sudden conversion to Jewish orthodoxy have been the result of orders from his Soviet spy contact?

Suddenly I had a brilliant idea. "In what city is the embassy?" I asked.

"In Tel Aviv, I'm sorry to say," the crisp leftenant replied, sounding not so crisp for the first time. "Your government has been unwilling to place the embassy where it belongs, in our capital city, Jerusalem." She shook her head sadly.

"I've always wanted to see the famous sights of Israel. Could we arrange a sightseeing tour? To the Wailing Wall, for example?"

"The Western Wall," Dr. Sapir corrected, sounding pleased. "Now that it is no longer on foreign territory, we don't call it the 'Wailing Wall' any longer."

"Bring me all the information you can get on the macroholographic projector you've been building. I'll study it until we're ready to go on our little tour. I'd like that to be our schedule for the next few days: work part of the day, tourism the rest."

I figured it would be fun to watch them manufacture excuses for not being able to take me to all the sightseeing attractions in Israel.

That afternoon, though, I was very impressed by the amount of money and effort, not to mention detailed preparation, the Russians had put into the attempt to fool me. As we drove in what seemed like a perfectly ordinary automobile—although a small one by American standards—I could detect no flaws in the splendidly worked out, utterly convincing illusion they had generated that this place was really in Israel. They even, incredibly, had mock-ups of the various famous buildings I specified! It became increasingly difficult to believe that all this elaborate and expensive preparation had been done just to fool me. Instead, I began more and more to fear that they had tampered with my brain—with my memories—while I had been unconscious. That would explain why I had been knocked out; it would also explain the presence of a physician when I awoke.

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I found it frightening to consider that things I was sure I knew, such as that Israel had a famous museum dedicated to the holocaust, might actually have been implanted by the Russians for some ulterior purpose. After all, my memories were the stuff that made me me. How could I be sure that I was still the same person I had been before my abduction? How could I be sure about any of my memories? Maybe there had never been an abduction. Maybe I was a robot built by my captors for the specific purpose of overseeing the construction of a giant holographic projector, and maybe all my memories were phony. Maybe there was no United States, no Leonard Bachutz, no Isaac Benson.

I thought this stuff while I was riding around in the little white Fiat, sitting in the back seat next to Lt. Dagell, with a glum-faced young non-com driving. He didn't seem to speak any English; Dagell communicated with him in quick barks of a guttural language I assumed was a local dialect of Hebrew, though it sounded more like Arabic to me. While I was scaring myself with thoughts that I might really be a fictional character, I tried to hide my disturbance behind conventional oohing and ahing at appropriate places along the tour. But Dagell noticed something was amiss. I guess I oohed when I should have ahed.

"Are you unwell?" she asked, peering into my eyes like an ophthalmology intern about to be thrilled by his first microwave-induced cataract.

"I'm fine," I gulped, but she didn't believe me.

She barked something more guttural than usual and the Fiat U-turned in heavy traffic, eliciting a splendid fanfare of car horns followed by *a capella* guttural cries.

My hands and feet had begun to tingle. Now the tingling seemed to spread all over my body. At the same time, my heart suddenly began to flutter and a reddish haze spread in front of my eyes. Considering how the Fiat was weaving through cars and pedestrians, that haze probably protected me from being scared to death.

The next thing I knew, I was lying in a hospital bed again, feeling very warm and drowzy. I hadn't felt so peaceful and contented since I was weaned—which is odd, since I was a bottle baby.

Dr. Sapir smiled down at me. "We'll have proof shortly that you're really in Israel," he said. I smiled up at him. He was really a very sweet man. It was a shame he wasn't real. But the fact that all this was an illusion was somehow very charming, very cute. I felt that this was the most pleasant little nightmare a man could possibly have, and I really felt grateful to him or to whomever was responsible.

"You told us all about it under narcosynthesis," he said pleasantly,

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and I couldn't help but be grateful that they had taken all that trouble over me.

The next couple of days were a twilight haze. They kept me happily drugged, just barely awake enough to take care of eating, drinking, eliminating, and answering silly little questions about that funny, funny notion—the giant holographic projector.

I think it was on the third day that they let the drugs wear off. I woke to find Dr. Sapir and Leftenant Dagell next to my bed again. Frosty-face Dagell actually smiled! "We have some visitors for you," she said. In walked my mother, Len Bachutz (dressed in his Orthodox Jew uniform), and a gray-suited, gray-haired pudgy gentleman I knew instantly must be the American Embassy official detailed to assure me this was really Israel!

There was a peculiar scurrying around inside my head. It lasted less than a second but it felt like a century of fierce, uninterrupted mental work. I had to rearrange all my perceptions. My final resting point was the conviction that it didn't matter whether or not I was in Israel—or Russia—or a nut factory in Norristown, Pennsylvania. The question was really metaphysical. The situation was such a convincing mock-up of being in Israel that I might as well act as if I were in Israel. After all, I really might be, after all.

A moment later I was delighted I had made that decision. In walked a fourth visitor. My, the hospital seemed kind of lax about how many visitors they let into a patient's room at the same time. Through the door undulated Shaya, the cute little hostess! This time she was wearing what looked to be a regulation Israeli captain's uniform.

It took a while for the several different conversations that ensued to get themselves sorted out but in time it was settled that my mother and Aryeh (Len) would be visiting with me for about ten days, with all of us sharing an apartment in a spanking new apartment house on the outskirts of Natanya. Shaya was introduced all around as my new assistant on the holography project.

My mother took an instant shine to her which she expressed by drawing from her pocketbook one of the little copies of the New Testament she always carries about. She thrust the Book at Shaya, explaining that it was a gateway to surpassing peace. I began to understand why Shaya was a successful double (at least) agent when she very gratefully accepted the volume and began leafing through it, suddenly absolutely absorbed and fascinated.

The next morning, at our new apartment, my mother woke me at six-thirty. For a sleepy thirty seconds I thought I was late to high school. Mother wanted me to start my first day of work right. She had prepared a breakfast that would

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have prepared me for work as a Siberian Husky.

There was a Jeep waiting downstairs for me when I emerged, burping, at seven-forty. Lt. Dagell (does she ever sleep?) was there to finger me to the driver. The Israelis, it turned out, were going directly for the big pay-off. Our headquarters were in a secret post behind and underneath a Druse-owned barbershop quite near the Mosque of Omar. You go in a little door at the rear of the barbershop, go down a flight of stairs, walk through a dusty basement full of crates of, I suppose, hair tonic, walk through a door labeled in Hebrew, Arabic and Turkish (I found this all out later), "Plumbing obstructed. Please use facilities upstairs." You are in a filthy room that smells like a latrine long overdue for cleaning. You step into the rickety toilet seat and press hard against the top of the dirty mirror next to it. Suddenly the room fills with an intense white light. The seat falls away but before you have time to fall, the mirror against which you are pressing tilts outward against your pressure. With it comes the entire wall, which suddenly is beneath you rather than in front. Before you have time to adjust to the fact that the entire roomlet has become a vehicle rushing through some underground passageway, before you have time to turn around and see where the harsh light is coming from, the ride is over. The wall beneath you tilts again and you tumble head forward onto a padded surface like a large gym mat. Standing all about you in a large room without visible doors or windows are fierce-looking Israeli soldiers holding burp guns pointing at the place your burps come from.

I never got used to that way of arriving at work. What would they do if one of the people who had to work there had a weak heart or, worse yet, had a back that was easily thrown out?

Except for the padded reception area, the rest of the room, which was about the size of a high-school gymnasium, was filled with equipment stolen from the set of a mad-scientist movie. Amazingly, though, it worked: With a very few additions and improvements, it was going to be able to project giant holographic images.

I suppose you're hot to find out how I left that fancy place. Well, I don't know. When it was time to go, they would very politely ask me to take a deep breath of an anesthetic gas. Next thing I'd know, I was sitting in a barber's chair upstairs. Don't ask me how they kept the neighbors from wondering about the strange-looking guy who would get carried into the barbershop every afternoon. Come to think of it, I don't even know, of course, that they did have to carry me. Maybe that anesthesia was really some sort of memory blackout. Maybe I walked in like a zombi, under my

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own steam, but with the clutch in, fully disengaging my brain.

Shaya was around a lot. She even came over to my apartment one evening, whereupon my mother suddenly got wanderlust. She announced she was going out to look for a taxi. "Where are you going, Ma?" I asked. It was Friday evening, a time when even the streets and sidewalks rest. That Friday night, I didn't. You would think that a good Seventh Day Adventist of my mother's generation would not have been that cooperative.

* * *

After my mother and Len left for the USA, Shaya surprised me: She accepted my offer and moved in. After that, life sped by blissfully. Finally the great day arrived. We would turn on The Temple on Hanukkah, the anniversary of the dedication of the Temple. Okay, so I wasn't thinking very clearly or I would have remembered how my Arab friends felt about the idea of the Israelis turning on the Temple. (They felt about it about how the police chief of Memphis would have felt about somebody turning on the President.) No, that's not quite right. I did remember and actually I was very scared. But it was an odd sort of fear. It didn't affect my work. Somehow it stayed locked up in a corner of my mind, walled off from the day's work.

I was terrified every night: I had nightmares in which Arabs with giant scimitars cut off my toes for practice before going on to cutting off my practice; I had cramps after every meal; I had spots in front of the spots in front of my eyes.

But somehow I had succeeded in tucking my awareness into a little pocket in my head whenever it was time to work on the project. I took out my fear and stroked it and fondled it every evening, but come morning I was able to put it away again. I guess I assumed that somehow, some way, those clever, competent, efficient Israelis would be able to handle whatever the Arabs tried to do to stop us or punish us. After all, those Israelis were so cool, so determined, so scientific.

We planned to turn the Temple on just before sunset, just before the time for lighting the first Hanukkah candle. There had been no official advance announcement of what we planned to do, just a vague news item that the Israelis had a surprising new scientific achievement to make public, one that had no possible military application but might nevertheless contribute greatly to the security of the Jewish state.

It was mad, of course, for the Israelis to have thought their Arab enemies would not know or at least guess what was up. First of all, the Arabs had been directly involved when I worked for them out in Angry Shah. Second of all, there was the little matter of the date. Hanukkah, Shaya told me, is the

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anniversary of the dedication of both the First and Second Temples. In the Middle East, symbolic actions count for a lot more than they do in Worcester, Massachusetts. Besides, the Israelis have enough holidays cluttering up their calendar now. They don't need another one to cut further into their productivity.

Another reason why I didn't get scared enough to do something sensible like panic was that while all this last-minute work was going on, I was growing up in a most delightful way. With Shaya's help, I had been getting big all the time. Without her, I don't know what this little boy would have done. Actually I do know, but I don't like to think about it.

Enough of all that. I have to stop being so flip because I have something really important to say and I want to keep my distance from those feelings of guilt and grief I can't handle.

Let me tell you a little of my relationship with Shaya; let me tell you as much as I can bear to talk about concerning what Shaya was like.

She had been born in Safed. Her family had never left Palestine. At times as secret Jews, at other times openly, they had kept alive in its homeland the ancient civilization of King David and the Prophets. During the long, lonely years of isolation and despair, when it seemed that the Master of the Universe had turned away from His chosen people, they had turned to mysticism and magic. A deep, esoteric lore had been developed in secret by the handful of faithful who stayed on in their Holy Land. This mystic learning was, in fact, the basis for the tradition that my friend Aryeh had become so engrossed in.

Naturally, surrounded by enemies as they were—of late, surrounded by Moslem enemies—they had become adept not only at magic but also at intrigue. Shaya's family was not only high in the history of Jewish mysticism and magic, it was also high in the revolutionary Arab underground. She told me a number of things that I find it very hard to believe. For example, that the Mafia is secretly a Moslem organization. It arose, she said, from a Moslem clan, the *Ma'afique*, who ruled Sicily in the Middle Ages. When the Christians regained control of the island, the Moslems went underground. Hence, she said, the Mafia preference for poisoning and blackmail, their love of intrigue, their fierce family loyalty, their elaborate system of secret identification, copied from their rivals, the Masons and the Knights Templars.

She also asserted that while a good deal of the international trade in drugs and prostitues was, through the Mafia, controlled by secret Moslems, a good deal of the international movement toward Arab independence from the colonial powers was actually led by Jews! Just as in the West idealistic young Jews had

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fought to support the aspirations for freedom of every minority except their own, so in the colonial Middle East, the sons and daughters of Jewish merchants and professionals in places like Beirut, Damascus or Cairo had been among the early founders of the underground movements for freedom from colonial oppression.

Of course their contribution could not be acknowledged openly but nevertheless some of the original Jewish members of the former anti-colonial underground were now high up in the governing circles of the Arab world, all with safe new Moslem backgrounds. Among these, she hinted, were some of the better-known enemies of Israel. She told me that, for example, the recent assassination of a prominent Arab leader, which no one in the West could explain, was because some of his own people had learned his true identity.

Shaya had two families, two complete identities. She was the daughter of an Israeli diplomat, granddaughter of one of the leading figures in the revival of the Hebrew language as a living tongue. In this family she was the great-granddaughter of a celebrated mystic Talmudist. But she also had another family. In the half of her childhood spent in Damascus rather than in Safed, she was the daughter of a Moslem merchant whose wife had converted to his faith from Judaism when they were married.

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Her brother was a graduate in business administration of the University of Chicago; he was also high up in the PLO. While in the United States, he had successfully recruited several leftist Jewish students into an all-Jewish battalion of the PLO now stationed in Syria.

Each family knew about and approved of her association with the other. It was for the sake of the cause. Her Safed family accepted her Syrian connection as a necessary unpleasantness, something that a little country surrounded by enemies had to resort to. Her Damascus family thought of her as a kind of unofficial ambassador to those Jews who, because of their mystic, religious tradition and because they really were natives of the region, might have more in common with their Arab neighbors than with those Jews who had brought strange secular Western ways into the Holy Land. There were, after all, in Jerusalem highly visible groups of Jews who still refused to accept the existence of the Jewish state. There were Jews who draped black flags and bunting on the Israeli independence day.

Which family really was hers? I never found out. Both families derived from the same Safed mystics; the branch point was only a generation ago. Why did she have anything to do with me? Look, I know I'm not that great a lover.

At first I tried to tell myself that she did the same with all the boys. I told myself that I should enjoy my good fortune and that since I had nothing to hide, there was no way that our relationship could lead to any betrayal.

But my feelings changed. There are some things a person can't disguise or fake. She was for real. We did a lot of talking about all sorts of things. She told me once, for instance, that I was the third man she had ever slept with other than for reasons of state, and that the other two were both men she had loved who were now dead. I believed her; she cried when she told me that. Besides, she knew I didn't have any secrets. If anyone in the world was in a position to know it, she was. But she stayed with me anyway.

Her explanation was absurd, of course. She said I was a genius and was just too modest to realize it. She claimed that my miserable affliction of obsessive generation of invention ideas was proof I was some sort of Mozart of inventing. She even claimed that I was an "unconscious" Jew because I was a Seventh Day Adventist who had private doubts about Jesus but not about most of the practical side of my religion, which—she claimed—was copied from Judaism.

All this is getting us nowhere. I'm not going on with my story because I can't face what came next and I'm not really communicating about our relationship. Let me try to take you through a typical evening and then I promise I'll finish this

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story quickly.

When I got home from that silly barbershop, a very domestic scene usually waited for me. It was like playing house. Shaya would have supper ready. I would usually insist on stopping on the way home to buy some little surprise, usually flowers picked up from a street vendor but sometimes a bottle of Israeli wine (which is very very good), sometimes some perfume, sometimes a silly trinket.

Once she got quite upset when I brought home some copper jewelry. She said the pattern inlaid in enamel was an ancient sign for evil. Then she laughed and said she could make it all right by wearing it wrapped in tinfoil, which would reflect the evil back into itself. And that's how she wore it!

There was always a fancy white tablecloth on the table. We never had guests at our meal, but people—friends of hers—often dropped in afterward. We had a little upright piano and one of her friends always seemed to head straight for it. He loved to play Chopin and somehow the sound of Chopin études is the musical theme of my memories of that happiest time in my life.

There was a lot of music. Often we sat around and sang, accompanied by someone's guitar. There are a number of hauntingly beautiful Israeli songs that are somewhere on the edge between popular and folk music—sort of the Israeli equivalent of American country western, except that they are gentler sounding and seem to have melodies and themes more appropriate for urban life. One very touching song that they told me was at the top of the charts when they were teenyboppers had a father promising his little girl that the war he was going away to fight in was the very last war there would ever be.

There was a lot of adolescent-type talk about the meaning of life, the purpose of the universe, etc. Except that these weren't teenagers. One woman who often had interesting things to say was a philosophy professor. There was another woman, a violinist, who used to play sad music on the violin for a while, then burst into passionate speeches about the injustice of the human condition, how unfair it was that we should have to grow old, that some babies were born deformed, that some are rich and some are poor. I learned that her husband was high up in the government and that he was a physician who had made important contributions to research on slowing the rate of aging.

The guests never stayed more than a couple of hours. Usually the evening would wind up with someone trying to draw me out about my latest invention ideas. I had never before been listened to so respectfully. No matter how weird my ideas, they were always considered seriously and responded to with

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careful thoughtfulness. Often I would find myself arguing that my ideas were foolish and worthless while several guests defended them. For example, one evening I had the notion that a spaceship could be launched efficiently riding a cushion of maser energy produced by the interaction of a maser beam emitted by a source on the spaceship and another beam, exactly opposite in phase, from a ground source.

My idea was that half of the energy expenditure could be on the ground (for generating the beam there) and so the amount of fuel and equipment needed on board the spaceship could be halved, compared to a more conventional propulsion system. Of course the problem would be one of getting sufficiently accurate collimation—the same problem involved in making a giant hologram.

You would think that I would have been optimistic and the others pessimistic. In fact, I just couldn't believe it would work, while my guests argued that it was a reasonable "next" project after the Temple project was turned over to the engineers and routine operating crew. They pointed out that it was not necessary that all the technical problems be solved at the time the first crude idea emerged; we could face the problems and solve them if we had to. They were, after all, only "engineering," not anything fundamental.

Listen: They even reacted with respect and cautious interest to my idea for a probe that would reach through a black hole to see what was on the other side. The probe would use modulation of relativistic phase-velocity waves in a gravito-gravitic oscillation (matter-generated gravity waves on one axis and anti-matter-generated on the other); by avoiding effort to transmit wave-velocity information, I thought we might beat the relativistic limitations on what could penetrate the black hole's infinite gravity sink. They didn't even scoff at the obvious fact that it would take a Brand X version of relativity theory to get different gravitic waves from matter and anti-matter. In short, for the first time in my life I found my fountain of invention ideas something other than a terrible affliction. To sum it all up: I stopped drinking.

The key wish—I mean *question*—for me, those days, was why Shaya had taken up with me when she knew so little about me. I never got up the nerve to say, "Who ordered you to?" but that was what was on my mind. She kept telling me that that was the way she was, that she had always wanted to love a genius and be loved by him, and I was a genius and therefore. . . . My wish, of course, was that she was telling the truth.

I also enjoyed my work enormously. It was just as enjoyable, I must add, working for the Arabs, but it was different here. We had

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less money and there were more problems, working for the Israelis, but it was very satisfying to confront each day a battalion of varied difficulties almost but not quite too much for me. I had a delightful feeling of being stretched and of growing in response to the stretching. Some of the problems were interpersonal: I was the manager of a team of creative young scientists and engineers and some of them were just plain temperamental. Again and again I had to find a way to make both sides of some silly disagreement feel that they had won. Then there were innumerable technical problems. We had to improvise, experiment, improvise, guess, improvise. I think that for the first time in my life I began to really respect myself. That early-middle-aged kid who had boasted foolishly to the hostess on that famous *El Al* flight was starting to grow up.

* * *

Holograph day came. That evening just after sunset we were going to turn on the Holy Temple. It was decided that I would go home, pick up Shaya, and then we would drive to a building near the Mosque of Omar, from which we could watch the great event. However, when I arrived at the waiting car outside the barber shop, Leftenant Dagell crisply informed me that we would drive directly to a different "safe" place near the Mosque. She said that she could not tell me why the plans had changed. I didn't have much time to argue with her. Almost as soon as the words were out of her mouth, the sirens in Jerusalem started to keen. It was the red alert signal: Take cover at once. We ran back to the barbershop and I ran down the stairs to the smelly room. The bright lights came on as usual but when I tumbled into the giant laboratory room, there was no one in sight. A voice from a concealed speaker somewhere overhead instructed me to walk to a certain piece of equipment and turn certain knobs and press certain switches. Next thing, the section of floor on which I was standing began to descend rapidly and I was lowered into a room I had never seen before, a room containing men dressed in senior Israeli military uniforms. There was a television screen on one wall, and the men were seated in front of the screen in two semicircular rows on sort of long curved backless benches. Among them was a face I recognized: Dr. Sapir's. However, the body to which it was attached was differently clothed than it had been back in the hospital. Now it was in a general's outfit.

The elevator had lowered me into the corner of the room to the left of the television screen. There was a wire grille around the section into which I had been lowered and I

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noticed that there was no way I could open it from the inside. Dr.-General Sapir walked over and did something to a row of control buttons set in the wall about a yard from where I stood; the grille slid up into the ceiling and I stepped off the elevator platform.

"The Arabs have launched an attack," he said without any other opening remarks. His face was very grim. "There was a leak and they had heard about our plans for this evening. We are switching to a contingency plan."

"How serious is the situation?" I asked. I also was concerned about Shaya, but I didn't feel right about bringing up a personal matter until I had a better picture of the larger situation. I knew that Israel was a small country surrounded by powerful enemies, and I realized that any attack could be a real threat to national survival. It had not yet begun to sink in that my project might have precipitated the attack.

"They have much better equipped forces than we expected. They have received very extensive material supplies from the Soviets, and so the massed air squadrons that are now moving toward an attack on us outnumber our air force by about ten to one; their massed armor outnumbers ours by about twenty to one. They seem to be holding back much of their ground infantry so for the moment we are not too far outnumbered there: only about three to one, which we feel gives us superiority in that regard."

My heart sank to my shoes. I found myself wondering whether the victorious Arabs would hold me as a war criminal. Would I be executed? Would the Israelis be foolish enough to try to hold out until they were crushed? If so, would I be killed in the fighting? How could I persuade them to surrender now, before a great deal of useless bloodshed?

"What do you plan to do?" I asked. I had tried to keep my voice sounding calm but it came out in a sort of high-pitched, breathless shriek.

"Our plan must be secret for the moment," he answered very grimly. "You don't have the clearance to be informed but we want you here anyway. You may be of some assistance."

"Then you aren't going to surrender right away?" I was practically jumping up and down with nervous tension. I could feel my chin trembling.

He just stared at me for a moment before he replied. "No, we don't have that in mind," he finally said, speaking quite calmly as if the situation were not hopeless.

"Here they come!" someone shouted and the doctor or general whirled around to stare at the television screen, along with everyone else in the room, including me. I assumed the voice meant the Arab attack and I scrunched down a little, half expecting to feel the vibration

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of a nearby bomb blast.

On the screen I saw from some distance what looked to be a row of cliffs in the hills just east of Jerusalem. It was a view of desert desolation. Suddenly a section of cliff began to move sideways toward the right. It was hard to judge scale since there was not even a bush in sight in that empty desert of rocks and sand, but I got the impression that the movement involved a giant volume of rock and soil. A great gaping vertical crack formed in the cliff side and out of it moved many tiny shapes, from time to time throwing brilliant reflections that dazzled the television cameras momentarily. The cameras zoomed in on them and I realized the shapes were tanks and armored vehicles that I presumed were troop carriers. The tanks and other vehicles were all elaborately camouflaged and so I was puzzled about where the brilliant flashes of reflection had been coming from, but after a while I concluded it was the windshields on some of the armored vehicles.

I tried to count how many tanks and other vehicles there were but it was impossible to do so. The television scene kept switching back and forth from close shots to distant pictures, but even the long shots did not seem to be able to cover the entire enormous force rapidly deploying through that one gap in the hills, which I now realized was truly Brobdingnagian; some twenty tanks seemed to be emerging abreast with plenty of space between them.

Evidently, I thought, this was the Arab invading force. I had to hand it to those clever Arabs. Hiding those forces in the desert like that was such a prodigious feat, it really had earned them their victory.

The television eye panned upward toward a sky that had no clouds in it but was almost covered nevertheless—with planes. I had never imagined a sky could be so full of aircraft. Rows on rows on rows moved in steady formation from horizon to horizon. Again it was impossible to judge the actual number since the television screen could not hold the image of a sufficiently large slice of the sky. A special lens would have been necessary, one that encompassed a full hemisphere of view.

Suddenly Sapir was next to me again, or perhaps he had never left. He pulled my face to one side, away from the screen, forcing me to attend to his words. "What do you think of that scene?" he asked. He seemed incredibly unterrified. I had to admire the nobility of the Israelis in defeat—or was he another deep double agent?

I suddenly realized that those planes were probably not just flying around for sightseeing. Many must be carrying bombs, perhaps even nuclear weapons. And Shaya was somewhere out there. The war was over, lost before it ever began, and so there was no shame in giving

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first priority to private, personal matters. "Can Shaya be saved?" I asked, talking so fast I must have sounded as if I were babbling. "Can Shaya be brought here before the bombs start to fall? Do you know where she is? She's out there, isn't she? Can we get a message to her?" I think I got all that out in one breath. Most of it should have been printed as one word, without any spaces.

Dr. Sapir suddenly grabbed me by both shoulders and forced me to sit down in an empty space in the front bench. "Shaya can't come," he said, looking very stern. His grip on my shoulders became so tight I ached. "There was an Arab suicide raid on your apartment this morning just after you left. They evidently thought you were still at home. They were ready to do anything to stop our use of your invention. Luckily for you, you had left already. But they got everyone still in the apartment."

I didn't get the main implication. Was he trying to tell me that Shaya had been two-timing me? Who else could have been in the apartment except for Shaya? I asked him: "Who else could have been in the apartment except for Shaya?"

"We had two security agents conferring with her about special precautions but there were about ten raiders and they had the advantage of surprise. Four of them actually got away and we are hunting for them still."

The room shimmered about me. He pulled my head forward against him. Suddenly I felt someone behind me pressing a hypo into my shoulder muscle, right through the shirt. "The best thing you can do now," he said, "is to help us against them. It's what she would want you to do. She had great faith in you. From the start she spoke in your behalf and was your chief defender. There were some who thought you might be a clever agent and so your freedom if not your life was by no means certain, at least at first."

"You lost the war and she got killed anyway?" I whispered, my throat oddly constricted. I was having great difficulty breathing.

"No!" he shouted. "We haven't lost the war! It begins to look as if we've won it!"

That, of course, was hysteria. It occurred to me that if he was so confused that he thought his side might have won the war, then he probably was much too confused to have any trustworthy information about Shaya. I felt much better. He probably had her confused with six other women. Maybe, poor man, something like what he had described to me had actually happened to him and a girl he had been living with many years ago.

"I'm sure everything will be all right," I said as soothingly as I could. I began to feel very sleepy.

Suddenly the screen changed. I recognized the face that appeared on

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it. It was the Prime Minister of Egypt. For the first time the sound came on and I heard him. He was obviously delivering some sort of solemn speech. Probably, I thought, he was assuring the Israelis they would be treated well if they surrendered immediately.

To my astonishment, the roomful of mostly stiff, military men dissolved into wild cheers. Men hugged their neighbors and, pounding each other on the back, danced around the room. Did the Arabs have some kind of nerve gas? Why wasn't I affected?

"Your holographic projector made the difference," Dr.-General Sapir shouted over the din.

I stared at him.

"It fooled you, too," he chortled. "The planes, Isaac, and the tanks, were mostly just images."

"How did you make them move?"

"One plane or one tank projected a group that moved with it. The Arabs had guilty consciences, a fatal weakness. They knew that they had sneaked in extra arms that the great powers, except for Russia didn't know about. Therefore they were ready to believe we had done the same."

It began to sink in that the Israelis had won. The Israelis had won and Shaya was dead.

I was suddenly furious. They had no right to victory, no right to joy! I threw myself on Sapir. I didn't try to strangle him. Rather, I tried to remove his adam's apple.

By the time they pulled me loose, Sapir was past breathing but they tell me they saved him; there were two officers in the room who also had medical degrees and one of them did an emergency tracheotomy with a pocketknife. Meanwhile, several others were roughing me up, to my deep satisfaction. I kept hoping they would kill me and to encourage this, I began to shout pro-Arab and anti-Semitic slogans. "International Jewish bankers!" I screamed. "Jewish Communist plotters!" Someone finally hit me on the back of the neck and everything turned red-black and faded out.

You would think that once the Arabs found out that most of the Israeli planes and tanks were illusions, they would have started the war up again but it didn't work out that way. There still remained the problem of determining which were real and which weren't—or otherwise wasting a very great deal of fire power and disposing one's forces to defend against non-existent enemy units. Until they (or the Russians) had worked out suitable countermeasures, an armistice seemed wise. Besides, since it had ended so quickly, they hadn't had time to lose any territory, for a change.

Meanwhile, the Israelis did turn on the Temple as planned but then promptly turned it off again. They had made their point. Next they invited the religions of the world to take turns projecting their own ver-

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sions of the Temple. Of course the Arabs refused to cooperate but various non-Arab Moslem sects were quick to accept the offer and it was not long before renegade Arab groups were cooperating with them unofficially.

Meanwhile, I had been shipped back to America and here I was able to expiate some of my guilt by persuading my Seventh Day Adventist friends to cooperate. That started a stampede of Christian participation and soon there was a cooperatively designed pan-Christian Temple available for the major Christian holidays. The only holdouts were the Orthodox Russians, but that was to be expected.

Increasingly there was friendly competition about designing more and more elaborate or authentic Temples. Perhaps different religions would have viewed dividing up a single material Temple as a desecration, but somehow they found taking turns filling the same space with different immaterial projections acceptable; turning off a projected or holographic Temple did not seem the same as destroying a real one, particularly when it was understood that the Temple just turned off was scheduled to be turned on again.

To the world's astonishment, the one Temple that was not regularly projected holographically was one for the Jews! There was preliminary planning by the Israeli government to do so but the orthodox religious parties viewed it as some sort of desecration. They withdrew from the government in a snit, unwilling to have anything to do with people who had even considered such a sacrilege. The Prime Minister made things worse by publicly denying that the government would have ever been so blind and depraved as to approve such a thing. This, of course, made it impossible for any successor government to do so.

Once the religious parties had withdrawn from the government coalition, a new election became necessary and the new Knesset was so evenly balanced that the only possible coalition appeared to be the only one that also was impossible: a coalition between the left-wing labor groups and the religious parties—the very coalition from which the religious parties had withdrawn when they caused the old government to fall.

Then came the next surprise for the world. The right-wing parties, the next strongest block, put together a shaky majority by inviting support from the handful of Arab members of the Knesset who represented Arab nationalist interests! The result was a government that was actually able to bargain credibly with the Arab states.

So in a way my dream finally came true: Any war involving Jerusalem would obviously endanger the projections, and so war in the Holy Land became less and less acceptable. The various groups, Israeli and Arab, were compelled to

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start some sort of dialogue. Because the right wing, now in power, had always been the most nationalist, expansionist, and anti-Arab, in that marvelously twisted way that things work in that part of the world, the Arabs found them easier to deal with, even ignoring the presence of Arabs in the government itself. They felt that the right wing was less hypocritical and more predictable because its traditional views were closer to the traditional Arab stereotype of Zionism.

However, about when I thought things were settling down and I was starting to think about rebuilding my personal life, the Israelis and Arabs, perhaps as a sign of their new cooperation, perhaps as some sort of revenge, identified me publicly as the inventor of the macro-holographic projector. That led the DIA, or whatever they call themselves to grab me and keep me here in this super-luxurious prison or nuthouse.

There are a million problems concerning the implementation of a whole family of new technologies using macro-holography. They seem to think that I am an expert. Therefore, they keep bringing me questions, and I am supposed to answer them, as if I were some sort of intelligent computer. Now you know that my problem is not that I don't have answers. My trouble is that I keep on producing answers, a continual flood of answers, but not

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to the questions that come from my masters, captors, good friends, fellow patriots, or whatever they are. And therefore my answers usually displease them.

I still can't control what questions I'll answer, although every now and then it's pretty obvious why a particular question got answered. For example, it occurred to me today that I had no objective proof that Shaya had bought it in an Arab raid on our apartment. Maybe, instead, the outbreak of the war made it unnecessary to continue her in that assignment.

Could I really be sure she loved me? I don't know whether I wish she is alive and I was a dupe or that she really loved me and is dead now. But I can see why that doubt immediately preceded the next idea I had.

I think I've just invented a practical form of psychic teleportation. I'm just about ready to bust out of this dump; I'll try to teleport to Lud Airport, just outside Tel Aviv.

I want to take a look at the hostesses getting off the next several *El Al* flights. Then, in case she was only on that flight in order to meet me, I think I'll take a look at our old apartment to see if there are signs of struggle. For that matter, I may chat with some of the neighbors. Finally, I think I'll let the Israelis "catch" me. They might think I was pretty valuable again if they see some demonstrations of my new teleportation trick.

In any case, I'm not so depressed suddenly. After all, if I can figure out a way to jump through space, then shades of old Albert, a way of jumping through time just may pop into my head one of these days, between improvements on the arbalest and ways of delinting belly buttons. Maybe the reason Shaya liked me was that we were already old friends when we met. ★

FORECAST

Ever hear of Tim Lewis? How about Victor Koman? Or Nicholas Yermakov? You're going to be hearing of them, as they make their appearance in GALAXY with their first published stories next month and in the months ahead. And we predict they're going to make their mark in science fiction.

One name you ought to know: C.J. Cherryh. One of the most brilliant new novelists on the sf scene, she is this year's winner of the John W. Campbell award. But her first appearance in *any* magazine will be in January, when GALAXY begins the serialization of *The Faded Sun: Kesrith*. It's her best yet, and you won't want to miss it.

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A Message from the Publisher:

A NEW EDITOR

With this issue GALAXY has a new editor. As we reported last month, James P. Baen has left the magazine after more than four years to become science-fiction editor at Ace Books. And stepping into the position he filled so well is John J. Pierce.

J.J., as he prefers to be called, is new to magazine publishing—but hardly new to science fiction. He became a convert in 1950, when he was nine years old and his parents took him to see the premiere of "Destination Moon." Before long he was an avid sf reader. The first story he remembers reading was James Blish's "Surface Tension"—in an early issue of GALAXY, of course.

Until now he has pursued science fiction as a hobby while working as a reporter for the *Daily Advance* of Dover, N.J., and other newspapers. During the last decade he became known in the sf community through his amateur publications ("fanzines") "Renaissance" and "Tension, Apprehension and Dissension." He also had a regular column in "Reason" magazine and published reviews and commentary elsewhere.

Two years ago his research into the life and work of Cordwainer Smith, who was one of GALAXY's stars before his death in 1966, led to an assignment to edit "The Best of Cordwainer Smith," now in its second printing. He has also edited "The Best of Murray Leinster" and "The Best of Raymond Z. Gallun," both of which will appear next year; and, as time permits, he is working on an "interpretive history" of sf called "Imagination and Evolution."

Since coming to GALAXY on August 1, J.J. has seen through the preparation for publication of two issues that had been mostly planned by Jim Baen but this month's issue directly reflects his influence—for example, the debuts of book reviewer Paul Walker and artists Amy Harlib and Joan Woods.

Beginning next month, you'll be seeing new material J.J. picked himself—discoveries from the wealth of new talent, submissions resulting from his many contacts in the sf field and a few real surprises of other kinds. We think GALAXY readers have a lot to look forward to.

—AEA, Publisher

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1. You'll be giving a gift of unique value. GALAXY is going for the best in established authors and new talent. In the year to come that means important works by writers such as Frederik Pohl and Jack Williamson, rising stars such as C. J. Cherryh (winner of the 1977 John W. Campbell Award for best new writer), and hitherto undiscovered writers making their first appearances in GALAXY. Readers will also be able to explore the frontiers of science and technology with J. E. Pournelle, get the lowdown on the latest books from Paul Walker and follow other regular features that have made GALAXY outstanding.

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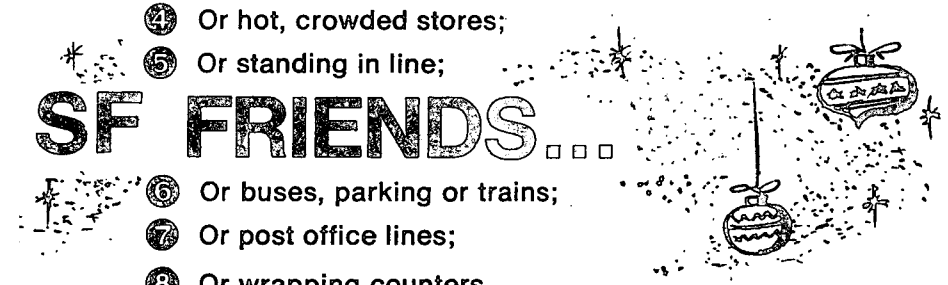

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GALAXY BOOKSHELF

Paul Walker

Lucifer's Hammer, Larry Niven and Jerry Pournelle, Playboy Press, 494pp., 1977, $10.00

The Ophiuchi Hotline, John Varley, Quantum, Dial Press/James Wade 237pp., 1977, $8.95

Cold Hand in Mine: Strange Stories, Robert Aickman, Scribners, 252pp., 1975, $8.95

* * *

What Josephine the Plumber Doesn't Know About Comets!

WHY ARE DISASTER NOVELS entertaining?

How can we take pleasure from watching great cities reduced to flaming ruins; thousands of people crushed, burned, trampled, drowned and buried alive?

The question occurred to me while reading Larry Niven's and Jerry Pournelle's *Lucifer's Hammer*, a disaster novel to end all disaster novels (but don't bet on it). It brought to mind a similar question I had asked myself years ago.

Once upon a time I used to watch bullfights on television and I enjoyed them very much. A friend of mine pointed out that it was a cruel and brutal sport and that if I liked it, I must be a cruel and brutal person. I wondered if he was right for as hard as I tried, I could not feel for the bull.

My friend saw the animal as a poor dumb beast; I saw it as a vicious, stupid creature. My friend saw the matador as a murderer; I saw him as an artist.

The point is that my friend and I saw two different things. And what we saw determined how we felt about the thing.

Pleasure, like pain, is a kind of stimulation. One we think of as positive. We know that there is often a fine line between them. Intense pleasure can be painful, and a lesser degree of pain can be pleasurable. The sensations of fear or grief are painful, for instance, and yet we ride the roller coaster

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and watch soap operas to experience both sensations.

It is seemingly a matter of degree, then, that determines whether a thing is pleasurable or painful. But there is more to it than that in the matter of bullfighting and disaster stories. We are deriving pleasure from watching the pain of others. Or are we?

If we are, and if we are reasonably normal, then the effect of a bullfight or a disaster story would be so tragic that we would be in tears throughout; but we know from experience that we will be thrilled. Why?

The answer is that both the bullfight and the disaster story employ the same dramatic principles. Both are kinds of fiction and even though the bullfight is a real event, in which real blood is spilled, it is the illusion rather than the reality that excites us.

Imagine a bull securely tied up in a field. A man comes into the field and, standing at a safe distance, begins waving a cape at the bull and sticking it with a sword. How would you feel? Incensed. Not only at man's cruelty but at his stupidity. And how would you feel toward the bull? Sympathetic. So sympathetic that if the bull suddenly tore loose and killed the man, you would scarcely blame it.

But now imagine the bull loose in the field. A man comes into it. The bull sees him. He charges at him. There is neither time nor place to run. The man is armed with only a flimsy cape and a sword. The bull has horns like knives and the power to gut the man with a twist of its head. Yet the man stands perfectly still and by means of the cape and the sword, he begins to defend himself.

Where do your sympathies lie now? Suddenly the bull is no longer a poor dumb beast but a monster; the man is no longer a murderer but a hero.

My friend could not see this. He could not see the drama; he saw only the principle of the thing. He could not feel anything other than indignation. Our difference lay in the direction of our sympathies. He felt for the bull, I for the man. Similarly in disaster stories, if our sympathies were directed solely to the victims of the disaster, we would be too filled with grief to feel anything but sorrow; instead, our sympathy for the main protagonists and their fate overrides everything else.

To us, they are humanity. They are us. It is *their* fate we are most intensely concerned with. So while we may see thousands of others suffering terrible deaths, we are kept from grief by our hope for our protagonists' survival. And if they do survive, as they usually do, the emotion they leave us with is hope.

But in order for this to be so, the writer has first to make us care for them; the extent to which he is successful in this will determine the

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amount of suspense we feel over their struggles to survive.

It is this success that makes Larry Niven's and Jerry Pournelle's *Lucifer's Hammer* one of the most exciting novels I have ever read.

But there is more to it than this. However real the illusion of a disaster story seems, the audience knows from experience that it is witnessing an illusion, a performance; and it knows a lot more about the dramatic principles involved than it consciously realizes. So when a spectator expresses admiration for a sword-thrust by the matador or for a scene in which a hundred people are buried alive under a collapsing building, he is not expressing his own brutality but an admiration for the skill of the artist.

And it is the skill with which Niven and Pournelle have created their illusion of the near end of the world that makes the book so impressive.

It is a classic. The best disaster novel since *When Worlds Collide* —better, in fact. And if you think I am letting my enthusiasm for it get the best of me, let me say that there is no end of things to get enthused about. For once, science fiction has produced a story that is the equal of its concept.

It is about a comet—or rather, pieces of a comet—that strike the earth, and the aftermath; the man who sights the comet beyond Neptune; the television journalist who does a documentary on it; the scientists who speculate fervently on its course; the astronauts who are sent up to get a good look at it. And the women in their lives.

The comet is not supposed to hit the earth. The chances against it are billions to one. Then millions to one. Then thousands. . .hundreds.

The protagonists are forced to flee for their lives across a chaotic landscape filled with people driven mad by grief and starvation. A blinding salt rain falls constantly. Rivers overflow. Dams break. Tidal waves wipe out coastal areas. And there is the prospect of an early winter, portent of a new ice age that will eliminate the remnants of humanity.

One by one the protagonists reach the only place of safety, a valley called the Stronghold, in which a handful of farmers and refugees struggles to survive against the weather.

But the safety of the valley is an illusion for soon it is besieged by an army of cannibals led by a mad preacher who has the best chance to conquer the world since Mohammed.

From the testimonials on the blurb that compare the novel to *On the Beach*, you might imagine the book has an equally downbeat ending. But if you know anything of Niven and Pournelle, you know who comes to the rescue. The real hero of the book is a nuclear power plant nobody loved.

The characters, and there are doz-

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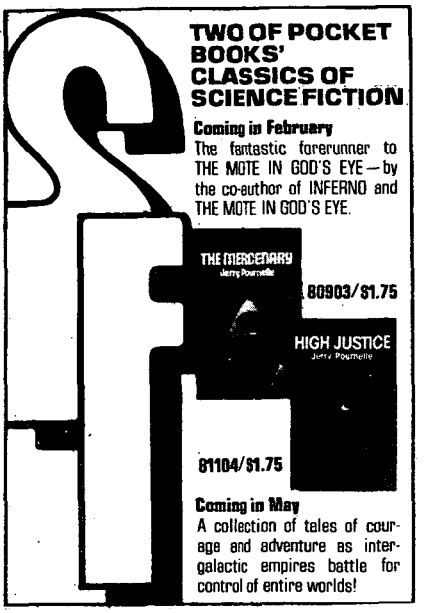
ens of them, are all respectably depicted although with the exception of a few who stand out by contrast, they tend to look pretty much alike. The real character of the novel is the community of the Stronghold. This is not clear until late in the book, when all the main characters are brought together and events that went before come to seem merely an introduction to what comes after.

The irony of the thing is that while Niven and Pournelle take a Heinlein stand on most everything (and there is an Ayn Rand-ish feel about the story), they have actually written a Marxian novel; for despite the fact that all of the protagonists are staunch individualists, it is the community itself that the novel is all about. No single character predominates over the rest. No character resolves all the problems the Stronghold faces. Rather, it is the communal effort that ultimately saves the world. Just as in an Eisenstein movie.

The initial descriptions of life in California are fine, with delightful touches of satire. The disaster itself is brilliantly described. And the aftermath—which had me worried, having read so many aftermath novels—was consistently absorbing. There is simply not a dull page in the book.

Nor an unimaginative incident. It is hard to believe it did not take Niven and Pournelle years to think all this out. And while I am sure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there are a hundred of amateur mathematicians already hard at work to prove them wrong in this or that speculation. I still think there will be plenty of good ideas left over. The second greatest joy of the novel is the feel of real sf minds at work on a level that would do honor to John W. Campbell.

Thirdly, there are individual scenes that are worth the price of the book itself. Particularly the ultimate surfer's ride on the ultimate wave. I will never forget that as long as I read. But then there was the dead kangaroo in the parking lot. The drive across the flood waters after the dam had burst. The attack of the cannibal angels and its

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chilling result. Just so many fine and exciting scenes.

When *The Mote in God's Eye* appeared, there was much speculation on what was Niven's and what was Pournelle's, with Niven getting most of the credit. Perhaps rightly. But that is not the case with *Lucifer's Hammer*. While the awesome scope of so many of the concepts seems typically Niven, the hard substance of the reality of the book that gives it its power seems typically Pournelle, but never have two talents blended so felicitously to produce a work that seems greater than either of them could have done alone. *Lucifer's Hammer* is a gem. I loved it.

* * *

Varley's Awfulitchy

There are two events of least significance in a writer's life: his first published short story and his first published novel. Unless, of course, they are the best things he is ever to write—a thought too terrible to contemplate. But normally, despite the euphoria of the author and the "bright promise" promised by the critics, no one remembers either the short story or the novel years later—a lapse for which more than one successful writer has been grateful.

If a writer's first novel is very bad, readers will expect his second to be worse; but if his first novel is very good, readers will expect his second to be a classic. And if it isn't, they are disappointed. Therefore, it is safer for a talented young writer to produce a merely "good" novel the first time out. Something more than competent but not quite brilliant or wholly original. Something that will leave the readers curious about the quality of his next one. Something such as John Varley has written in his first novel, *The Ophiuchi Hotline*.

Varley is a young writer who lives in Oregon and his short stories have already established him as one of the best new talents in the genre. His novel is about a far future time when mankind has been driven from the Earth by the enigmatic Invaders, who came to liberate those whom they regard as the only truly intelligent species on the planet—the whales and dolphins. Humanity has fled to the Eight Worlds of the solar system, where they hope the Invaders will not follow.

Varley's heroine is named Lilo. She is a genetic engineer who specializes in producing new breeds of edible plant meats, which are the staple foods of her civilization. But her real interest is in producing new breeds of human beings, a practice outlawed by the government. She is caught at it and sentenced to death. And she dies. But there is someone who still has need of her and who has the power to save her life, even after death. Or, at least, the power to clone her.

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"Boss Tweed," the ex-President of Luna, fancies himself the future savior of the Earth and he has Lilo cloned so she can work for him on his private fortress-world of Poseidon near Jupiter, another Invader stronghold. Lilo does not believe in Tweed's cause and she is not one to accept captivity. She tries to escape. She is killed again. And cloned again. In fact, Tweed is prepared to clone her as many times as it takes to gain her cooperation.

What Tweed does not know is that in a ship orbiting Saturn she has a clone of her own, guarded by an unusual ally named Parameter/Solstice, who is a symb—a half-human, half-alien creature fully able and willing to live indefinitely in space.

On Poseidon Lilo and a friend plot to escape by means of a black hole. But they are guarded by a ferocious army of clones—some men, some women—named Vaffa.

And midway through the novel, the story begins.

Three Lilos go into action against Tweed, Vaffa, the Invaders and the source of the Ophiuchi Hotline itself—the alien messages from another star that have given humanity the knowledge of advanced genetics that has made its clone-oriented culture possible. Somehow all these factors are tied together in the solution of the mystery of the Invaders, and each Lilo has her part of the mystery to solve.

Sounds like fun, doesn't it? And it is. All very old hat but good clean fun just the same. Varley has written a complex and eventful novel that is easy and amusing to read. His ideas are interesting and well-thought-out. His characters are likeable, their adventures exciting. His backgrounds are colorful and concisely detailed. And he writes some of the best sex scenes I've read. Scenes that are pleasurable rather than clinical or sweaty.

The book's worst flaw is that its heroine is not much of a character. She is really more of a function than a person. She does the things the plot requires a heroine to do but she lacks a distinct and memorable personality. This is a common fault in books of this type but it is especially obvious here where we have three of her running around.

She is supposed to be a genius or, at least, very brilliant but as with most very brilliant sf scientists, her intellectual prowess is unconvincing. While her accomplishments are remarkable, she is never shown as reasoning with more than a modest intelligence.

Nor is her usefulness to Tweed convincing. She has a pathological urge to escape. Tweed, who knows her subconscious better than she does, is aware of this and should have realized that this compulsion would make her more of a liability than an asset. She is too unstable to be trusted and yet, in the end, he trusts her with the most important mission of his career! And, of

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course, he has reason to regret it.

With the power to clone anyone he chooses, Tweed would have been wiser to pick a more docile subject than Lilo. But then, Tweed is the book's second biggest mistake. His villainy is central to the plot, but he too is never developed into more than a function. With one exception, he appears only in glimpses and he finally vanishes completely. What character he has is that of a right-wing militarist intent on destroying godless communism (or, in this case, the Invaders). I suspect Varley had something like this in mind and consequently refused to allow himself to like Tweed well enough to fully realize him. A writer has to like his villains to make them believably villainous. I could see nothing wrong with Tweed's ambition to re-take the Earth. True, it was impossible but neither Tweed nor Lilo could know that until they had spoken to the Ophiuchites. His sole villainy seemed to be the employment of nasty methods—ones that seemed to me to be lacking in imagination as well as efficiency. He would have been wiser to have relied more on behavorial modification, less on cloning.

His henchman (-men, -women), Vaffa, while menacing enough in a street fight and okay for guard duty, is no match for Lilo. Like Tweed, she is Varley's idea of a soldier—all brawn and no brains.

Finally, the first half of the novel concerns Lilo's trying to figure out what Tweed wants from her and her plans to escape. It held my interest. At midpoint the plot splits into three parts, with one Lilo encountering the Invaders and wandering an almost deserted Earth, another Lilo still plotting against Poseidon and still a third off to discover the source of the Ophiuchi Hotline. While Varley handles these plot lines expertly, it was all a bit much.

One main plot line is enough to make an effective novel. It is the surest method of achieving maximum reader involvement as well as maximum dramatic potential. When another plot line of equal or greater strength is added, interest is subtracted from the first one; and the more interesting the new line, the greater the diffusion of the overall interest. Consequently, the escape from Poseidon and Tweed's war against the Invaders become subplots as do the Invaders themselves, and the story winds up being about the flight to the Ophiuchi station. At least I think so. It is difficult to say precisely what the novel is about at the end, for Varley resolves nothing. True, it is all interesting; the book never really bogs down but it loses much of the power it had to start with.

This is a common failing in sf novels, especially those by our most imaginative writers. They cannot resist just one more dazzling concept or mind-boggling plot twist. One good idea, thoroughly developed, is

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worth two piled precariously atop one another.

Despite these failings, *The Ophiuchi Hotline* is still a book I would recommend to hard science-fiction fans. Its failings are commonplace in even the best sf, and despite them, Varley tells a good story. He writes well and some of his scenes—St. Pete's Casino on Pluto, Lilo's trek down the Atlantic seaboard, her fall into Jupiter—are excellent. Lively, colorful and imaginative. I look forward to his next book.

* * *

Looney Tombs

If one of the criteria of fans in judging a ghost-story writer is that the author's stories lead them to believe that the author himself is as crazy as a loon, then Robert Aickman is right up there with Poe and Lovecraft. There is a consistency of vision in the eight long short stories of his *Cold Hand in Mine*: a depth of insight and an earnestness of sentiment toward his characters that, as in Poe or Lovecraft, lead one to think they incorporate autobiographical elements.

The title is the best clue to the nature of these stories. Quiet and subtle. Chilling but never sensational. More puzzling and unsettling than horrifying. And in most cases one is left wondering if they are ghost stories at all and not psychotic episodes, the hallucinations of haunted men and women who have so separated themselves from the everyday world that mundane definitions of reality no longer apply to them. They are lonely, alienated people for whom the world was a strange place long before they were visited by the supernatural.

And yet, is it the supernatural?

Where Robert Aickman transcends the company of Ira Levin or Tom Tryon is in that sense of earnestness he imparts toward the unreal, suggesting that he believes in a spiritual reality—one that involves both good and evil.

In "The Real Road to the Church" a woman who had been disappointed once too often in love and life retreats to a remote house on an island to bury herself and her memories, only to find them again, literally, on her doorstep in the shape of a spectral funeral procession.

Where a Stephen King would have played the idea for all its eerie worth, Aickman concentrates our attention on the woman's feelings. The barren, rocky, windswept terrain is as much a part of her psychological ambience as of the island itself, as is the old house in which she lives. So we come not only to see her but to feel that we have lived in her mind. And we find she is not a stranger to us. All of Aickman's characters have some of us in them, that part of us that we do not like to think about very of-

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ten. That part of us that touches on madness.

She has lived in the old house for a long time and seen and heard nothing of the outside until that morning, when she hears her housekeeper discussing the legend of the road that passes her doorstep. She goes for a walk and meets a retired cleric, who brings up the subject again. She complains she has seen nothing. He tells her that is because she did not know what to look for. She has isolated herself in an effort to forget and at the same time she wishes only to remember and forgive. Perhaps if she were to look the next time, to ask the questions she needs to have answered? But the housekeeper had warned her not to look.

She returns home in a storm, soaked and nearly delirious. She comes to expect the procession. It arrives. She looks, she asks her questions. And the answers save her life.

The atmospherics of the classic ghost story are there. The trappings. The omens, the encounter. Yet there is something more that makes the story memorable. We cannot be sure the woman actually saw the procession or had an hallucination; or is Aickman trying to tell us that there is a spiritual reality co-existent with our own?

Most of Aickman's characters are guilty of the sin of despair. They have separated themselves from the world of humanity and dwell in shadowlands of their own making. Their fate, likewise, is of their own making. Or is it? Like everything else, we can never be sure and that very uncertainty is what Aickman wants us to feel. He prefaces his book with the quote: "In the end it is the mystery that lasts and not the explanation."

Not all of Aickman's people are so easily categorized but even in the case of those who seem to be innocent victims, we are left wondering—and wondering in the same way that we often wonder about ourselves.

The subject matter of most of the stories is not unusual: a vampire; an inn that provides permanent accommodations for its transient clientele; an evil yellow dog; a woman with a strange affection for clocks. In each case the trappings are familiar but so subordinated to the psychology of the characters and the eerie ambience of their minds as to seem completely fresh.

Curiously, the book is a Literary Guild selection. I can't imagine why. Fans of the Tryon-King style will be disappointed. But for the purist, the connoisseur, it will be a treasure.

I guarantee it will be a collector's item one day. Robert Aickman is, in the words of Gahan Wilson, "the most terrifyingly intrepid explorer of the classical ghost story now living."

His name, incidentally, is pronounced "Ache-man." ★

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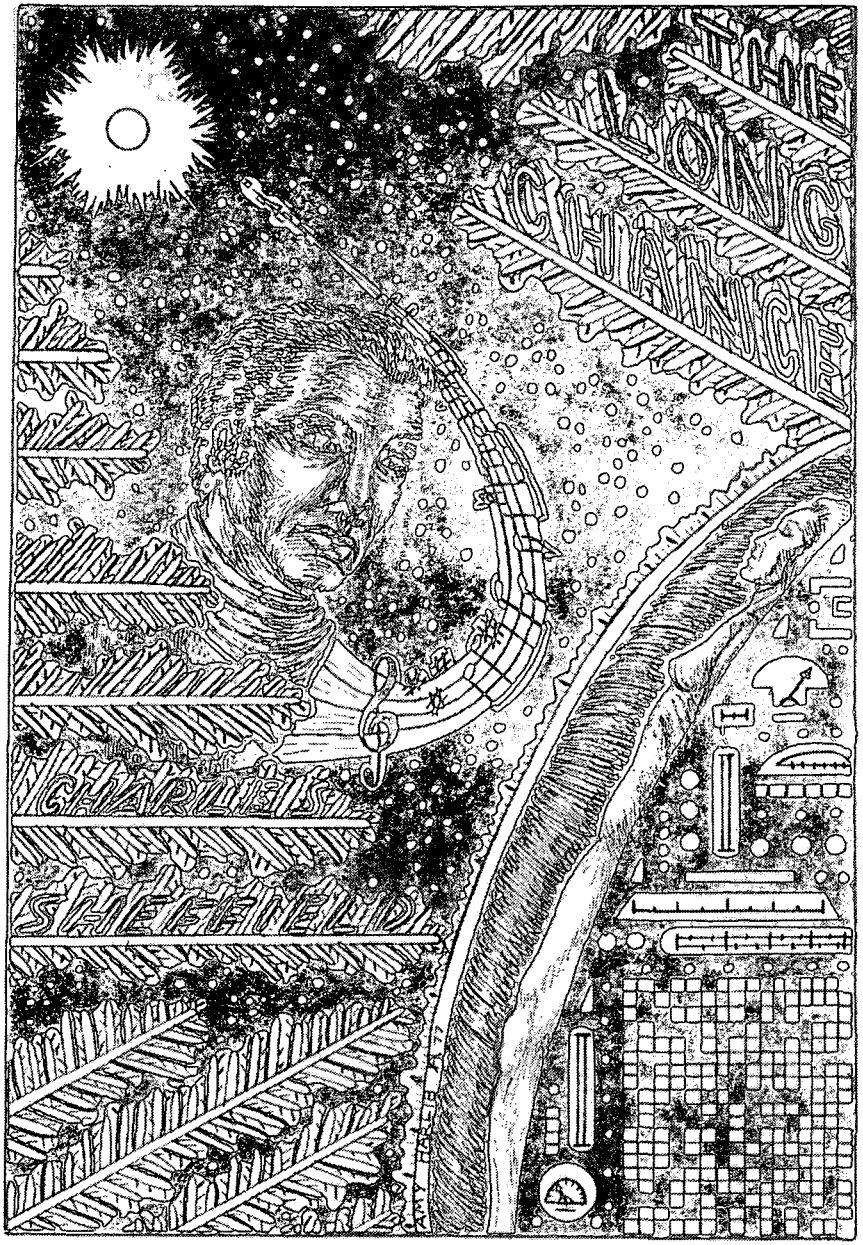

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All the world loves a lover. But for all time?

IT TAKES TIME to adjust to bad news. Unfortunately, time was the one thing we didn't have; when we finally received a clear medical diagnosis, Ana had less than five weeks to live and was going down fast. Suddenly, after seven marvelous years together, with every reason to look forward to fifty more, I saw our future collapse into a handful of days.

For more than a month I had known in my heart that there was a big problem. Ana's loss of weight and general lassitude were bad omens which, together with the translucent, waxen look of her forehead and the fine blue veins on her temples, had warned me of the worst. Tom Lambert, our doctor and a good personal friend, finally told us the grim biopsy results: no operation, no treatment worth trying and a rapidly terminal prognosis. Tom was a realist—which I am not. He prescribed massive doses of pain-killers and tranquilizers for Ana, and more tranquilizers for me.

"Take as many as you need, Drake," he told me. "And don't neglect your own health. I can be here any time, night or day, if you need me."

I flushed my prescription down the drain as soon as he had left. I had already drained my cup of sorrow. There was work to do, and little time to do it; I needed all my faculties. Ana and I had always done all our thinking together, our planning together. Now I had to work it out for both of us. It took me two frantic weeks to make my plans, snatching the time when Ana was sleeping or drugged. Then I called Tom Lambert and asked him to come over.

He arrived early that evening. It was fantastic May weather, with spring flowers leaping to blossom and bursting life everywhere except in the darkened house. After a brief examination of Ana, Tom led me into the living room and shook his head.

"It's going faster than I thought, Drake. At this rate, Anastasia will go into a final coma in a week or so. Let me have her taken to a hospital now. You don't want to see what's coming. You don't look as if you've had a wink of sleep yourself for the past month."

True, but irrelevant. I sat down opposite Tom and told him what I wanted to do, the part I wanted him to play. He heard me out, then shrugged his shoulders. I could see the pitying look in his eyes as he agreed to go along with my request.

"If you want to do it, Drake, I'll help you. After all, Ana has nothing

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to lose. But you know they've never done a successful thaw and revival, even on a healthy test animal. I have to tell you that in my opinion you'll be wasting your money and just making this thing harder for yourself. What does Anastasia say about the idea?''

''Not much. She's willing—maybe for my sake. She thinks that it won't work but she agrees that she has nothing to lose. Look, bring the papers with you tomorrow and we'll sign them. We have to do it quickly, while Ana can still hold a pen.''

Eight days later I called Tom again. He came to the house, felt Ana's pulse and took blood pressure and brain-wave readings.

''I'm afraid this is it, Drake,'' he said. ''I'll be very surprised to see her regain consciousness. If you're still set on this thing, now's the best time for it, while she still has some vestiges of normal body functions. A week from now it would be a waste of time.''

I took a last took at Ana's calm, ravaged face. I fought a battle deep inside, forcing myself to believe that this was not my last farewell to her. Then I nodded to Tom. He injected five c.c.'s of Asfanil to assure continued unconsciousness. Then, working together, we lifted her from the bed, removed her clothes and laid her gently in the thermal tank. While Tom filled out the death certificate, I called Second Chance and told them to come to the house. Tom set the tank at three degrees above freezing, inserted the needles and began the temperature drop. The blood was withdrawn through a large hollow needle in the main external iliac artery, cooled a precise amount and returned to the femoral vein.

In ten minutes Ana's body temperature had dropped thirty degrees, all life signs had vanished and she was dead. Technically and legally, Tom Lambert and I were now murderers. The death certificate showed that Ana had died of a cardiac arrest induced by her main disease—impossible to dispute. When the Second Chance team arrived, her body lay peacefully in the thermal tank, maintained precisely at three degrees above freezing.

I had a hard time persuading them to let me go over to the Second Chance preparation building with Ana's body. Tom thought I just couldn't face the idea that it was all over, and he too urged me to accept the fact of her death and stay at the house with him. The preparation team didn't know what to make of it. I must have seemed like a ghoul to them, or some kind of necrophiliac. They told me that the procedures were not pleasant to watch and I would be much better off leaving everything to their experienced hands.

Of course I couldn't tell them the real reason why I had to see the whole preparation procedure, in detail. By simply refusing to take no

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for an answer, I had my way.

Most Cryo-corpses were stored at liquid nitrogen temperatures—about minus two hundred degrees Celcius. I was not satisfied with that. Minus two hundred is still seventy-three degrees above absolute zero. Although all gross biological processes become imperceptible long before that, there are still plenty of chemical reactions going on and the laws of statistics guarantee that a few atoms will still have enough energy for biological changes. Mind and memory are very delicate functions. I insisted that Ana be prepared and stored as a Heli-corpse, at a couple of degrees absolute. That way the probability of change, physical or mental, went way down. The cost, naturally, went way up.

I hung around in the preparation room, ignoring all hints that I should wait outside, and I watched closely. The team finally concluded that I must be worried in case they messed up the job, so they humored me and even answered my questions. After the first few minutes it became impossible to see what was happening. As soon as all the air cavities had been filled and all the blood replaced with anti-crystalloids, Ana's body went into the pressure chamber. The temperature was held at three degrees above freezing, while the pressure was slowly raised to five thousand atmospheres. Then the temperature-drop started.

Back in the 1960's and '70's the freezing process had been done at atmospheric pressure, and the formation of ice crystals ruptured the cells as the temperature dropped. The thawed results were hardly useful, even for tissue transplants. The modern method makes use of the fact that ice can exist in many different solid forms. If you raise the pressure to three thousand atmospheres, then drop the temperature, water will remain liquid to about minus twenty degrees Celsius. And when it finally changes to a solid, it isn't the familiar form of ice—usually called Phase I. Instead, it goes to something called Phase III. Drop the temperature from there, holding the pressure constant, and at about minus twenty-five degrees it goes into another form, Phase II, and stays that way as you drop the temperature still further. If you go to five thousand atmospheres before you drop the temperature, water freezes at about minus five degrees and goes to yet another form, Phase V. The trick to avoid cell-rupture problems at freezing point is to inject anti-crystalloids, which help to inhibit crystal formation. Then by the right combination of pressure and temperature changes, work your way down toward absolute zero, passing into and through Phases V, III and II.

The process is very tricky and there is absolutely nothing to see except dial readings. The pressure chamber is made without seams or observation ports for obvious rea-

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sons. You don't get pressures of five thousand atmospheres, even in the deepest oceans. Fortunately, once you have the temperature down to a hundred degrees absolute, you can let the pressure back down to one atmosphere—otherwise Heli- and Nitro-corpse storage would be impracticable. As it is, there are three-quarters of a million of them stacked away in the Second Chance wombs, all neatly labeled and waiting the resurrection. As soon as someone figures out how.

In my opinion, it will be as hard to re-vivify most of the early Cryo-corpses as it would be to get Tutankhamen's mummy up and about again. They weren't frozen using the correct procedure and they were stored at too high a temperature. But they paid their depositis and they have the right to sit there until the rental runs out. I had started Ana with a forty-year rental but I thought of that as just a beginning.

I had a copy of Ana's medical records with me at the Second Chance preparation building. I added to them a full description of what I had observed in the Heli-corpse preparation, copied the whole thing, and made sure that a complete set was included with the file records on Ana that would be stored in the wombs. After Ana's body was taken away there, I went back to the house, fell into bed and slept like a Cryo-corpse myself for thirty hours.

When I was fully awake again, fed and bathed, I called Tom Lambert. It was time to drop the other shoe. I went over to his office, accepted a hefty drink that Tom prepared, after one look at me, for "medicinal purposes," and told him my plans.

After I had finished, he came over to my chair, poked the muscles in my shoulders and the back of my neck, pulled down my lower eyelid and looked at the exposed skin, then went and sat opposite me.

"You've been under a monstrous strain the past few months," he began.

"It would be quite natural for your behavior or feelings to have been completely normal. In fact, you only seem normal even now because you've walled in your emotions. You don't really understand the implications of what you're suggesting."

I shook my head. "I've been thinking about this since the first day we had your terminal diagnosis."

"Then that was the day you put the lid on your real feelings. Look, Drake, Ana was a wonderful woman, and I think I have some faint idea of what you've been through. But you must try and look at this thing objectively. You can't let it become a complete obsession with you. You have a life of your own, you must live it."

While Tom was talking, I found it hard to listen to him. The room

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felt hot and airless and I had trouble breathing. His words seemed to come to me from a long distance and they didn't penetrate fully.

"You're still a young man, Drake, with forty or fifty good years to look forward to. You are one of the word's leading composer and your best works lie ahead. Ana performed your work better than anyone else—but there will be others who can learn. With your talent, you owe it to the rest of us not to cut yourself off in your prime.

"Drake, take my advice as your doctor and your friend. Get out of that house and take a vacation. You feel one way now, but give it a year and then see how you feel. I guarantee you things will seem quite different. You'll want to live again."

The breathless feeling was fading and I again had control of myself. Tom's reaction was just what I should have expected. I nodded agreement.

"I'll do as you say, Tom, and get away from here for a while. But if you're wrong—if, say, I come back to you in eight or ten years and ask you again, will you do it? Will you help me? I want you to give me an honest answer—and your word on it."

I saw the tension leave him. "Ten years from now? Drake, if you come back to me in eight or ten years, I'll admit I was wrong—and I'll help you to do what you want. That's a promise. But I'll bet you everything I own that you don't call me on that promise. Come on, Drake, let's drink to your future and to your next composition."

I shook my head. "Not tonight, Tom. I really have things to do. For one thing, I'm getting ready to go out of town for a while. I'll be in touch."

A half-truth. I wouldn't leave town until my plans were more firmly fixed. But I certainly expected to be in touch with Tom Lambert when the time came.

* * *

I had two problems. One was well-defined: money. I needed enough to make sure that Ana's Cryo-corpse would be kept safe into the indefinite future, until she could be thawed, her disease cured and her life begun again. There were some things I obviously couldn't guard against, such as a total collapse of the world back to barbarism, or the rejection of all present forms of currencies and commodities. Those were risks I had to accept.

The other problem was more subtle. According to Tom, it would probably be a long time—a hundred years maybe—before Ana's unusual and highly malignant disease could be cured. Suppose it were two hundred years, or even more. What knowledge of present-day society would interest people in the year 2200, or the year 2300? What

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should a person be, for the people of that future time to think it worthwhile to revive him? If we had a foolproof way of resuscitating the Cryo-corpses, most of the unfortunates in the Cryo-wombs would remain just where they were. Why add another to a crowded world, unless he had something special to offer?

I imagined myself back in the early nineteenth century. What could I have put in my brain, then, that would be considered valuable two hundred years later? Not politics, 'not art—our knowledge of them was quite adequate. Not science, or any technology—we had gone far beyond their level.

I had plenty of time to tackle the question—time, which had been denied to Ana. I could plan and calculate at my leisure. I had set a goal of ten years—that would still give us forty of the fifty we had looked for and expected. But I was willing to stretch that a couple of years, to twelve or so, if I had to. My only recreation while I planned was to estimate the probabilities that it would all work out as I hoped. Always, the chances came out depressingly low.

While I pondered my second problem, I was hard at work on my first one—making money. I turned my back on compositions that broke new ground. Instead, I took commissions, wrote commemorative pieces, gave concerts and made recordings—anything was accepted if it was lucrative. It was continuous, grinding toil. If anyone thought I was debasing my art, they were too polite to comment on it.

After four years I had my biggest stroke of luck and my money worries disappeared. I had written a set of short pieces a few years after Ana and I were married, as a kind of musical joke. Baroque forms, with baroque period harmonies, except for occasional modern harmonic twists, spice inserted where it would be most surprising and most appealing. They had been quite successful, among a limited audience. Then I gave permission for them to be used as the incidental music for a series of holovision dramas on life in eighteenth-century France, from Louis Quinze to the French Revolution. The dramas turned out to be the surprise hit of the decade. Suddenly my minuets, bourrees, gavottes, sarabandes and rondeaux were flooding out of every audio outlet, and my royalties were flooding in from every country of the globe. I established a trust fund that would guarantee continued care for Ana's Cryo-corpse for many centuries.

While all this was going on, I was feverishly busy soaking up all that I could of the personal lives of my musical contemporaries. I interviewed, entertained, courted and analyzed them—and I wrote, in summary form, of my actions. What would the people of the future want to know of the present? I was

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betting that it would not be the formal works, the text-book knowledge, the official biographies—they would have more than enough of those. The historians would want to hear the personal details, the chat, the gossip. They would want the equivalent of Boswell's journals and Sam Pepys' private diary. I was careful in my own writings to tantalize my reader, hinting that I knew far more than I was putting into print.

It took time, but after nine long years I felt that I was as ready as I would ever be. I hadn't given as much attention as I would have liked to the question of earning a living in two hundred years' time—but it might be fifty, two hundred, or a thousand. Could Beethoven, suddenly transported to the year 2000, have earned a living as a musician? Let me be less presumptuous—make that Spohr, or Hummel, or some other of Ludwig's less famous contemporaries. I was betting that they could, with ease, as soon as they had picked up the tricks of the time. If I were wrong. I'd do the twenty-third-century equivalent of washing dishes for a living.

I put my affairs in reasonable order, then went over to see Tom Lambert. We hadn't kept up such close contact since Ana had gone. I'd had other things on my mind, and Tom had married and was busy raising a family. He was genuinely glad to see me and fussed over me like the returning Prodigal Son. We settled in the same familiar study while Tom beamed at me and his wife went to the kitchen and killed the fatted calf.

"I hear your music everywhere, Drake," he said. "It's great to know that your career is going so well."

It wasn't, in the strictest musical sense. I had done no really first-rate composition for many years. But Tom had no ear at all for music. Perhaps that was the reason that we had always got along so well—there was no chance of any professional jealousy.

I hated to spoil Tom's pleasure, but the sooner it was done, the better. I took out the application and handed it to him without speaking.

He looked at it and all the happiness faded from his face. He shook his head in disbelief, then looked at me closely.

"Drake, when did you last take a vacation?"

I did not understand his question.

"When did you last take any sort of break from work, Drake? How long since you relaxed for an evening, or even for an hour?" he went on. "I hear that you've been working incessantly, year after year. Face it, Drake. *Ana is dead.* You can't live forever with your own emotions chained and harnessed."

The study seemed to be much too warm, and I was having trouble in catching my breath. I swallowed several times and finally pointed at the application that Tom was still

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holding in his hand. I still could not speak. Tom's words washed over me but I could not understand them.

"You've done all you can do for Anastasia," he said. "She's in the best womb, she had the best preparation that you could get. You can't go on with your obsession. You're famous, you're productive —what more do you want? You want me to help you to give up all this and take the long chance that someday, God knows when, they'll find a way to revive you. Drake, you're physically healthy and in the prime of life. Don't you see. I can't help you." He looked again at the application form. "It's against my oath as a physician. I'd be taking you from health to a high odds of final death. Drake, you need real emotional help, more than I can give."

I was at last able to force myself to speak. I said, "You gave me your word, Tom."

"My word, damn my word. You can't ask this of me." I said nothing and finally he spoke again. "Why, Drake? Why would you do this?"

"I have to, Tom." I spoke gently. "You know why, if you think about it. Unless I go on ahead, they may never wake Ana. She may be one of the last on the list. You and I know her as she really is, but what will her records show? A singer, not too famous, killed by a devastating disease. You

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know they'll wake the ones they need first. I *have* to be there. I must make sure that they wake Ana as soon as they have a certain cure. I've had the time to prepare, she didn't. I feel pretty sure that they'll wake me."

Tom looked blind with misery. "Drake, you can't see reason. You're set on this, aren't you? If I say no, you'll just go to someone else?"

I nodded, again without speaking, and he put his hands over his face. At that moment I knew that I would be able to gain his cooperation.

Five days later Tom Lambert had made all the preparations and we went together to Second Chance. I took a last look out of the window at the trees and the sunshine, then climbed slowly into the thermal tank. Tom injected the Asfanil and after a few seconds I began the long fall, dropping forever down the longest descent a man can ever make. All the way down to two degrees absolute, colder than the coldest Hell ever conceived by Dante.

* * *

Did I dream my superconducting dreams lying there twelve degrees colder than a block of solid hydrogen? Or did I only dream that I had dreamed them as I came slowly slowly back through the long thaw? It makes little difference. There was an eternity of twisted images, of a procession of pale lights moving forever on a black background, long before I had any form of consciousness.

I was one of the lucky ones. The freezing process must have gone very smoothly, and all that I lost during the thaw was a few square centimeters of skin. But the pain of waking—ah, that was something else. The slow final stages, up from three degrees Celsius to normal body temperature, took thirty-six hours. For most of that time I was pierced with the agony of waking tissues and returning circulation, unable to move or even to cry out. In the last stages, before full consciousness, hearing came back before sight. I could hear speech around me, but not in any tongue that I could recognize. How far had I traveled? As the pain slowly faded, that was my first thought.

I had to wait for the answer. While I was still half-conscious, I felt the sting of an injector spray, and I went out again. Next time, though, I came up all the way, opening my eyes to a quiet sunlit room, not too different from the one in the Second Chance building where I had started the freeze.

A man and a woman were watching me, talking together softly. As soon as they saw that I was fully awake, they pressed a point on a segmented wall panel and went on with their work, lining up two complex pieces of equipment.

The man who came in presently

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through the smooth white sliding door was dark-haired and clean-shaven, with a smooth, almost womanly face. He came to the side of the bed and looked at me with a pleased and proprietary air.

"How are you feeling?" It was English, oddly pronounced. That was reassuring. I'd had two worries when I went under, not including the obvious one. The first was that I would be revived in just a few years' time, when they would be unable to do anything at all to help Ana. The second, that I'd surface after fifty thousand years, a living fossil, unable to communicate my needs to the men of the future.

"I am all right. But weak. Weak as a baby." I thought of trying to sit up, then changed my mind.

"You are Drake Merlin?"

"I am."

He nodded in satisfaction. "My name is Par Leon. You understand me easily?"

"Perfectly easily. Why do you ask? *When* am I?"

"The old languages are not easy, even with much study. In your measure, you are in the year 2374 of the prophet Christ."

Three hundred and sixty years. It was longer than I had expected. But better long than short. I had hated and feared the idea of doing it all over, again and again, diving to the bottom of the Pit and then clawing my way back up to thawed life.

"I have waited here through the warming and the treatment," went on Par Leon. "Soon I will leave you for rest, more treatment, and education. But I wanted to talk with you first. I feared a mistake in identity, that it might not be Drake Merlin who was awakened. Also, some become insane with the pain of the awakening. You are a strong man, Drake Merlin. You did not cry out or complain at all during your thawing."

Other things were on my mind. I looked across at the two doctors who were chatting together in an alien tongue as they worked. Could they cure Ana? "Language must have changed completely," I said. "I cannot understand them at all."

"Understand them? The doctors?" He looked surprised. "Of course not. Neither can I. Naturally they are speaking Medicine."

I raised my eyebrows. The look must have survived with its meaning intact, for he went on. "I speak Music and History—and of course, Universal. And I learned Old Anglic to understand your time and speak with you. But no Medicine."

"Medicine is a language?" My mind was slowed by the long sleep and the drugs.

"Of course. Like Music, or Chemistry, or Astronautics. But surely this was already true in your time. Did you not have languages for each—what is the word—discipline?"

"I suppose we did, but we didn't know it." No wonder I'd found educators, psychologists and com-

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puter scientists—to name but a few—incomprehensible. The special jargon and odd acronyms had made new languages, more alien than classical Greek. "How do you speak to the doctors?"

"For ordinary things, in Universal, which all understand. For specialized talk, such as our discussion of you, we keep a computer in the circuit to give exact concept equivalents in any pair of languages."

Multi-disciplinary projects must be hell. But then they always were. I was beginning to feel strangely and irrationally euphoric. I pulled my strength together and made a determined effort to sit up. I got my head about five centimeters from the pillow, then fell back.

"Slowly. Rome—was not built—in a day." Par Leon was clearly delighted at coming up with such a prize piece of genuine Old Anglic. "It will be moons before you are fully strong. Two more things I will tell you, then I will let your treatment go on.

"First, it was I who arranged for you to be brought here and revived. I am a musicologist, interested in the twentieth and twenty-first centuries, particularly in your own time."

One of my bets of long ago had paid off. I wondered what modern music would be like. Could I learn to compose it?

"Under our law," went on Par Leon, "you owe me for the cost of revival and treatment. That is six years' work from you. You are fortunate that you were healthy and properly frozen, or that time would have been much longer. I think you will find your work with me pleasant and interesting. Together we will write the definitive history of your own musical period."

It looked as though it would be a while before I needed to worry about earning my own living—presumably Par Leon would feed me while I was paying off my debt.

"Second, there is good news for you."

Par Leon was looking at me expectantly. "When we woke you, the doctors found certain problems —defects?—with your body and your gladular balance. They hope they have cured these. You should now live between one hundred and seventy and two hundred years.

"The gland adjustment was more subtle. You showed some madness, an uncontrollable compulsion, a fixed idea about a woman. The doctors observed this as soon as you were thawed enough to respond to the psycho-probes. They have made small chemical changes and have, they hope, corrected the problem. What are your feelings now about the woman, Ana?"

He was watching me closely. My heart was racing and I felt as though there were weights on my chest. I closed my eyes and thought about Ana for a long moment, until I was calm again. When I opened

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my eyes again, I looked at Par Leon and shook my head feebly. "There is nothing. Just the faint feeling that something once was there. Like the scar of an old wound."

"Excellent." He smiled and nodded. "That is most satisfying. The disease she had was eliminated from us long ago by mating choice—eugenics, that is your word for it? The doctors say they could revive her but they are not sure they could make a cure. It is important that thoughts of her should not interfere with your work for me."

"Her body is still stored?"

"Of course. We keep all the Cryo-corpses for possible future use. They are like a library of the past, to open when they will serve a purpose. Who knows? Two hundred years from now her disease may be cured and if there is a need for her, she too will live and work again."

"She is near here?"

"Of course not. What an idea!" Par Leon was shocked. "We cannot afford the space on Earth. The Cryo-corpse banks are kept on Pluto, where space is cheap and cooling needs are small."

That sentence, more than any other he had spoken, wrenched me into the future. What technology was it that found it more expedient to ship a few million bodies to Pluto rather than keep them in cold storage on Earth? Three hundred and sixty years was the time from Copernicus to Einstein, from Monteverdi to Schoenberg, from the first successful American colony to the first landing on the Moon. I had come a long way.

Par Leon was still looking at me, a little anxiously. "You ask again about the woman. Are you sure that you are all right—that you are cured?"

I cursed my own stupidity. I did my best to smile reassuringly. "Don't worry. As soon as I am strong enough, we will begin our work."

He nodded. "After you have had training—that is essential. You must learn to speak Universal and Music and know enough to live in this time. It is my responsibility to see that you find activity when your work for me is finished. Rest now. I will come again tomorrow or the next day, when you will be a little stronger."

As Par Leon left, the doctors brought a piece of padded head-gear and placed it on me. I went out at once, with no time to react to its presence.

When I awoke again, I already had a smattering of Universal and a good elementary knowledge of the civilization of the year 2374. Now I understood Par Leon's confidence that I would quickly pick up the knowledge that I would need to work with him.

Facts, vocabulary and rules could be taught almost instantaneously. Use of language came more slowly. After a couple of weeks I decided that two aspects of the times would

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be forever beyond me: modern science and the morality that governed the age. It was no surprise that I would find science difficult. In my own time teachers had regarded me as hopeless as I struggled with Feynman diagrams and was baffled completely by axiomatic field theory. But morals? Surely they should be comprehensible? I comforted myself with the thought that Henry the Eighth would have been appalled at the idea of killing civilians in time of war and baffled by my revulsion at the idea of public executions.

After a month of preparation Par Leon and I were able to begin our work. I would keep my part of the bargain and give him six good, long years for his great lifetime project, the analysis of the musical trends of the late twentieth and early twenty-first centuries. More important than any facts were the perspectives I could offer him. He found it hard to believe how much man-woman and man-man relationships had affected everything in my era. With modern methods of mating dictated by selection of desirable gene combinations, he found it almost unthinkable that people should have mated randomly, on impulse. He was fascinated by my comments. It was a little irritating to him that I had become a Cryo-corpse just before a couple of events that he was especially interested in had happened, but he accepted that philosophically and with good humor.

While we worked, I learned more about the times. The Solar System was explored, known like the back of a man's hand. Venus had been terra-formed, Mars colonized, and there were permanent manned stations—some 'manned' by organic computers—on all the major satellites of the outer planets and on Pluto. Space drives were available that would get as close to the speed of light as you wanted—but few people were interested. The stars were within easy reach, but no one seemed to be stretching out his hands. Civilization seemed changed, content with the limits of the Solar System. I took hypno-courses in astronautics and space systems and became expert in the practice of drive mechanisms. The theory, I suspected, was forever beyond me.

Work went on. I shouldn't give the impression that with Par Leon it was a one-way transfer of information. From his vantage point three hundred and sixty years away, he had developed insights into what was really happening in the musical world of my earlier life that left me gasping. So that was where those musical forms were leading, and that's where Krubak had been aiming in his much-ridiculed late works! Something—perhaps the glandular adjustments that the doctors had performed on me—made working with Par Leon a pleasant experience. Previously I had always been something of a loner. To say that I was perfectly content

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vould of course be wrong, but iven my preoccupations, I was nore content than I would have imgined.

The text we were producing teadily grew. By the beginning of ıe fourth year, I knew we were vriting a classic together. During he sixth year we were nearing ompletion and Par Leon was uggesting the possibility of other ollaborations.

After the work was finally comlete, Par Leon—a good man by ny moral standards I would ever be ble to comprehend—helped me to ecome established as a composer. was easier than I expected. nowledge of the centuries before ryo-corpses was quite spotty, with ome big gaps. I could steal tricks om the musical titans of my own ast, use them in the modern style, nd get away with it. After three ears I had a growing reputation vhich I secretly knew was undeerved), a group of imitators, nd—most important—a substantial nancial credit at my disposal.

At last I could wait no longer. I nounced that it was time for me take a long-overdue vacation and e a little more of the Solar Sysm. The night before I left I took ar Leon out for dinner. We went his favorite place, ate his favorite ods, and drank his favorite wines. ven though I suspected that if I ld him the truth he would be my illing accomplice, I did not tell m what we were celebrating or why the occasion was so very special. My plans might involve danger and destruction and I did not want Par Leon to bear any blame when I was gone.

* * *

So there we were. Ana and I, together again. We were heading for Canopus in the space yacht that I had rented for a two-month tour of the inner Solar System. Murderer in one era, I was now thief and worse in another. Even with forged papers to help me, it had been a desperate and violent run through the Pluto wombs and the Solar security perimeter with Ana's Cryo-corpse. Twice I had been within seconds of collision and destruction, but my pursuers' fear of death had exceeded mine. They had changed course to avoid impact and I had fled through their net.

We were traveling at just one hundred and twenty-five meters a second below the speed of light and could get within a meter a second if I chose to. We were moving fast enough. Time dilatation made three years pass on Earth for every day of shipboard time. The trip to Canopus and back would be a little more than two months for us, and two hundred years back on Earth. I felt I could use the time to relax a little. The days before I collected Ana from the Pluto wombs, followed by our escape, had been more than hectic.

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I never ceased to be amazed at the capacities of the ship—which, because of time dilation, mankind seemed to have found no real use for. The mass indicator showed more than one hundred and forty thousand tons, up from a rest mass of a hundred and thirty tons.

To an outside observer I would appear to mass about eighty-eight tons and be foreshortened to a length of less than two millimeters. Although it was hidden from me by the shields, I knew that ahead of us in the forward direction the three-degree background radiation left over from the Big Bang had been Dopplershifted up to visible wavelengths. Behind us, hard X-ray sources looked like pale red stars. And we were nowhere near the ship's limits.

I had started composing again—real music, not pot-boilers or derivative works. In the room aft, Ana lay peacefully in her Cryo-tank. I felt optimistic that two hundred years would be long enough for Earth to have developed a complete and certain cure. If not, we would head out again and repeat the cycle. There was plenty of time. If Earth could not at last provide our answer, we could go elsewhere, on to the stars to search for other solutions. The ship was completely self-sustaining and had ample power for many lifetimes. I hoped that the single trip would be enough, though; one of my ambitions on our return was to find the Cryo-corpse of my friend Par Leon, and return his favor to me.

As we swept up to the great flaring beacon of Canopus, I decelerated to gravitational swing-by speeds and let the ship fall through a tight hyperbolic orbit around the star. Canopus was a fearsome sight. More than a thousand times as luminous as the Sun, it was spouting green flares of gas hundreds of millions of kilometers long. I searched for planets and found only four gas-giants, each the size of Jupiter. There were no signs of an inner-planet system.

After two days of fascinated observation I turned the ship and headed back to Earth. Were mine the first human eyes to see the twisting striations—sun-scars, not sun-spots—that gouged the boiling surface of Canopus? Like a lost soul flying from Hell-gate, I ran for the shelter of our own Solar System. If another trip out were necessary, it would be to a smaller and less turbulent star.

That sight of Hell had affected me more than anything I could remember. It burned in my mind and I could not eat, drink or sleep. The urge to see Ana again, to seek peace in her face, grew on me and at last I went aft. She lay in her tank like a Snow-goddess, with pearly eyelids and skin of milky crystal. I took only one quick look, afraid to open the tank more in case it interfered with the cooling system. It was enough. I could control

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myself again and think of other things.

On the tranquil return trip, I wondered again at how easy everything had seemed. I had never thought of light-speed ships and time dilation when I was making my plans so long ago. At best, I had prepared for a chancy succession of freezings and thawings for me, further and further in time until at last there was a cure and Ana could safely be revived. As it was, Ana was with me; I could safeguard her myself and there was no risk at all.

In we came, past the barren outcroppings of Pluto and on to the inner planets. With no idea how Earth would have changed in two hundred years, I had no way to decide whether I should approach slowly and cautiously or rapidly and confidently. My decision was made for me. As we rode in above the ecliptic, avoiding the asteroid belt, we were locked by a navigation and guidance beam and steered to a landing on the Moon.

The spaceport was new, massive columns set in a regular triangular array. Spaceflight at least had changed since we left. The guidance system set us down gently. Prepared for anything—or so I thought—I stepped through the lock to meet a new generation.

One man greeted me in the lock corridor, a tall dignified figure with the distant eyes of a prophet. Somehow I had expected more, perhaps a show of weapons until my identity was known.

"Welcome again to Earth-space, Drake Merlin."

The language was still Universal. I said I was prepared for anything—but I was not prepared to be recognized and named. I was taken aback, then I realized that the ship's identification was given in the communication codes, and I would be shown as the last pilot. The data retrieval presumably still held those records. I wondered what else the system showed about my wild flight from Pluto.

"Since you know my identity, then perhaps you also know my history. I am seeking assistance."

The man nodded. "We know your history, and your quest. It has come down to us from ancient times. One version holds that you lost control of your ship and were carried off to the far depths of space. Another tells that your disappearance at light-speed was intentional. Come with me, we will find conversation easier inside the city."

There were small pauses in his words, almost as though he had need to stop and think about many phrases. I wondered if Universal was a learned language to him, as Old Anglic had been to Par Leon. We settled into a reception room, close by the inner lock, and I felt a rising tension. In a few moments I would know if my search was over.

"The Cryo-corpse that you have with you in the ship. What was the

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disease?''

''I think there is no word for it in Universal. It disappeared from the race and from the language. The full medical description was given with the womb records.''

He nodded. ''Do you have the womb catalog number?''

I gave it to him. He stood motionless, eyes distant, for almost five seconds. Then he nodded again. ''It can be cured. I have summoned the necessary medical resources.''

Two waves of emotion swept over me. Wild joy, and an almost superstitious fear. Telepathy seemed to have been added to the human senses.

''You can transmit your thoughts?'' I asked.

He looked puzzled, and again there was a brief silence. Then he smiled.

''Not in the way that you are thinking. I can exchange thoughts with others, and with the data banks, but you will be able to do the same in a few days' time. You will also be able to compute faster and better than the computer of the ship that brought you here. Look.''

He turned his head to me and raised the gray hair above his left temple. There was a faint, straight scar there.

''That is the place where the implant is made. There is no reason this could not have been done in the time in which you first lived. A small set of integrated circuits handles calculations—we think in the numbers, just as in your day you did it through finger-pressure on keys.

''The implant is fully programmable. It also contains a signal transmitter and receiver, so that we can enter data and programs directly from the central computers, or from another person. I am speaking to you now in Universal by using the translation programs on the Tycho computer system.''

He caught my look of misgiving. ''Do not worry about this. I assure you that in a few months you will find it hard to believe that you functioned without such a service. You will have total recall, be a calculator beyond the most skillful of your time, and you will have immediate access to all the data of the Solar System—though the transmission time is considerable for the data banks of other planets.

''Now, let me query the medical team. They should have made their first examination of the Cryo-corpse in your ship.''

He was again silent for a few seconds. Then his eyes widened and he looked at me with a different expression. The silence continued. I felt again a knife of tension twisting inside me, a feeling that something was going wrong.

''What is it?'' I said at last. ''Have you been in communication with your medical team? What do they say?''

He nodded. His eyes now seemed

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different, gentler and closer. He appeared to be choosing his words with great care.

"The woman in the Cryo-tank. Anastasia. When you took her from the wombs of Pluto, was the Cryo-tank fully sealed?"

I could not speak and my mind was filled with foreboding. I inclined my head a fraction of an inch.

"But you opened the tank? After you had left Pluto?" he asked gently.

"Once. To see her, after we left Canopus. I looked for only a moment, and I sealed the tank again afterward."

I could not tell him that I had been unable to stop myself, I had been driven. Suddenly I was looking at him across a gulf of five hundred and seventy years. His sad face was Tom Lambert's, and Par Leon's also. His eyes were speaking the same message.

"Drake Merlin, the Cryo-tank was intended only for storage in the wombs. After it was opened, the seal was imperfect. You understand what I am saying? Without the correct seal, the temperature in the tank was too high."

He seemed unable to speak for a few moments, and I assume that he was calling for more data from his computer banks. Then he continued. "I have checked with the medical team and with the best data sources. The damage caused to the

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body when the tank was opened and the seal broken cannot be repaired. There can be no revival, now or ever.

"I am sorry, Drake Merlin. Anastasia is dead. Forever dead."

Forever dead. Forever dead. The words seemed to echo Tom Lambert, from long ago. This time there was the ring of complete certainty. For each man kills the thing he loves. I had taken the long chance, and now it was over.

There was a long period of introspection, twenty billion nanoseconds of communion with the data banks and the medical teams. As my world collapsed, the barriers came down inside my mind. I noticed for the first time the faint spicy sweetness of the air fresheners, the steady dry breeze blowing past us, and the faint concert pitch A-natural of vibrating metal far along the corridor. My senses were opening again, after long centuries of hibernation.

At last he spoke again. "One possibility remains. Anastasia, the woman you knew, cannot be reanimated. Whole cells remain and she can be cloned without difficulty, but growth and education would begin anew. There is no hope of sufficient memory transfer from undamaged cells for more than a faint inkling of her former self to pass to her new body. Your former close relationship would be irrelevant to her. Should we proceed?"

I wanted to say yes, but caution held me. "Why would you do this for us? What will the price be, to me or to her?"

Shrugged shoulders had retained a meaning, although I could not see how such information would be transferred through a communication implant.

"You would be deprived of an implant and you would not share our group-consciousness. Call it an experiment. The group-mind has become curious about the behavior of single units such as you, not connected through the implants. Also, we have a feeling that in the old emotional patterns can only be called sympathy. Your suffering is unique. No quest comparable with yours is recorded in the data banks, unless it is the fragmented and confusing description of Orpheus and Eurydice.

"Shall we proceed?"

Only one answer was possible. "Proceed."

* * *

Coda and Overture.

So it begins. Anastasia lies in my arms again, for the first time in more than five hundred and seventy years. She weighs a little more than five kilos and is just three weeks out of the clone-womb. It took me an eternity to learn it, but by now I know better than to cast dice against the future. In twenty years' time, I may be no more than father and mentor to her. It will suffice. ★

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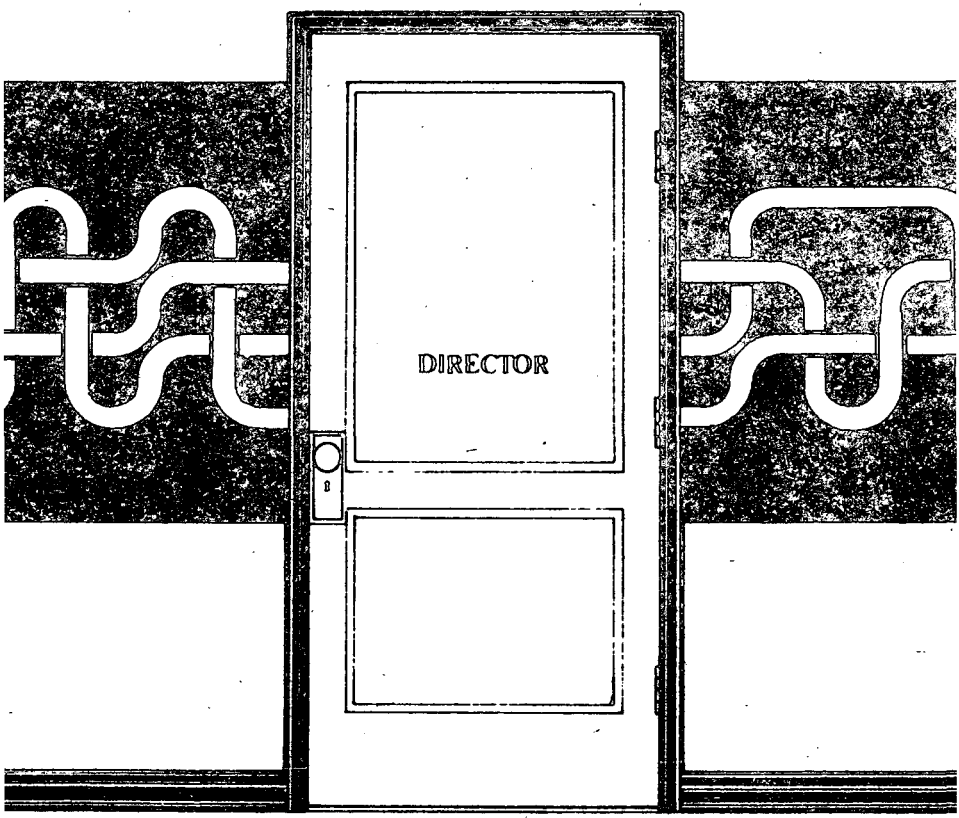
THE TIMELESS SPY



BY GLENN T. WILSON

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Sorry, you'll have to provide your own scorecard for this!

"THIS," said the Director, "is the control panel of a time machine. Or rather, it is a non-functioning mock-up of the control panel of a time machine. It will transport you back into the past when you take on this assignment, Howard. Do you wish to inspect it?"

Howard Bradley stood up and accepted the proffered panel, then sat down and propped it on his knee to inspect it. It was about three feet by two feet, made of light plastic sheeting and studded with a large number of small buttons and three bigger ones below. The instructions were in both English and the equivalent Russian, Bradley noted; 'SEND,' 'OPEN' and 'CLOSE' on the three big buttons; seconds, 0 to 59; minutes, 0 to 59; hours, 0 to 23; days, 1 to 31; months, January through December; and years, 1977 and 1978.

"Hmm." Bradley scratched his head with his right hand. "There seem to be only two year numbers, sir, this year and last. Doesn't it go any further than that?"

The Director leaned back and smiled. "No, Howard, apparently not. According to the inventor, it can't go back any earlier than when *he* originally invented it, and it can't go forward any further than it's been of its own accord through time."

"So what happens in 1979, sir?"

"Oh, we can add buttons easily enough. The digital mechanism in the control panel is easy enough to understand, just the standard kind of thing you'd find in an electronic calculator. The guts of it though, the motor, really had us baffled."

"*Had* you baffled, sir? You mean we now understand it?"

The Director smiled ruefully, shaking his head. "No, Howard, no. I don't think the Russians can understand it either, and *they* have the only working model. Or *had* it until recently, that is. We have, er, connections over in Moscow, and from all accounts they were going batty trying to figure it out. Didn't want to destroy the working parts by tampering with them too hard, exactly the same problem we had."

Bradley sat back in his chair, biting his lower lip as he tried to concentrate. "Ah, let's see, sir. Why don't you fill me in a little more fully on this. This is, presumably," and he lifted up the panel, putting it tidily leaning against the left leg of his chair, "the same time machine that was invented last year by Doctor Helmut Heinrich of Switzerland. The one that the Russians paid a billion dollars for, right?"

"A billion dollars and a million, dammit." The Director scowled

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darkly. "Those damn Russians *knew* our bidding limit, they *knew* we'd have to go to Congress for anything higher. And the inventor didn't want to wait, naturally."

Bradley shook his head sympathetically. "Ah, sir. The weaknesses of democracy." There was silence for a few moments.

"Well, sir," Bradley continued after a while. "So the Russians have the only time machine, right?"

"Well, sort of." The Director knitted his brows as if puzzled about exactly how to continue. "Here, Howard, why don't you come along to the Research Lab? I'll show you a mock-up of the whole thing." He got up and left the office at a brisk walk, with Bradley following behind. "Now, Howard," he continued, "the thing folds up. Like a folding table. It is *very* important that you practice to get it right. Your life may depend on it."

"Folds up, sir?" Bradley asked. They reached the big door of the Research Lab, the Director nodded to the guard and they passed through.

"Yes, folds up," the Director replied. "That way you can put one time machine inside another one, to transport it." They turned right along a corridor.

"Er, sir?" Bradley queried. "I thought there was only *one* time machine?"

"Well, we *think* they are all the same one." The Director shrugged. "Here," he opened a door on the left. "There's our mock-up."

"That thing? The one that looks like an elevator cage?" Bradley gazed curiously at it, walking slowly all round it. A big cubical structure, eight feet tall, mounted on casters, with a glass window at the front and sliding doors, nothing particular around the back, and five buttons on the right, marked 'OPEN,' 'CLOSE,' 'SEND,' 'FOLD' and 'LOCK,' with the same words in Russian. Inside, through the window, there appeared to be a panel like the one he had seen earlier. "Can I press the buttons, sir?"

"Certainly. Oh, the 'SEND' button does not work, of course. Be *very* careful not to press it when you are with the real model."

Bradley nodded and pressed buttons, 'OPEN'—the door opened. 'CLOSE'—the door closed. 'FOLD'—nothing happened.

"It has to be open to fold up, Howard."

"Er, yes." Bradley pushed buttons again. 'OPEN'—the door opened. 'FOLD'—nothing happened.

"Good, Howard." The Director stepped inside and folded the roof down against the back, then walked around the outside, pushing down the left side, the back and the right side. It took a considerable muscular effort, Bradley noticed, but the hinges hardly made any noise. The finished product was a squat box, about seven by seven by two feet;

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part of the base, he noted, had also folded up.

The Director stood back, rubbing his hands. "Ok, Howard. Your turn. Unfold it; push in the lock button; fold it."

Bradley wrinkled his nose in distaste. This looked a little too much like hard work. Shrugging his shoulders, he moved in, pushed the sides back in reverse order, and pushed the 'LOCK' button. Then the 'FOLD' button, and the sides again. He sank down in a nearby chair.

"Right first time, Howard." The Director smiled. "Now, push it over the floor on its casters and lift it up into the *other* time-machine mock-up over there."

Bradley scowled, pushed it over the floor and started heaving it up. One caster, up, and along. Second caster, up, push. Third caster up, and the fourth, and sli-i-ide it in. He sat down on it, perspiring heavily.

"Ok, Howard." The Director sounded infernally cheerful. "Now, climb in on top of it and press the buttons to close the door."

Bradley wearily complied. Clamber up; bend down; 'CLOSE;' 'OPEN.' The doors worked. He sat down on the edge again, frowning.

The Director smiled broadly. "Now, Howard, we could, theoretically, put a *third* time machine inside—"

"Oh no you couldn't," Bradley interrupted. "You don't need a spy, you need a professional weightlifter. I don't think these things were *designed* to be stacked inside each other. I don't think I could even reach the buttons if there were another one inside."

The Director shrugged cheerfully. "Of *course* they weren't designed to go inside each other. They were designed to fold up so they'd go into a truck or a plane. The time machine doesn't actually *go* anywhere, it just goes backward and forward in time, in the same spot."

Bradley scowled. "Not very useful, is it? The Russians can *have* it, as far as I'm concerned." He got off and walked over to settle into a nearby armchair. "Well, what now, sir?"

The Director smiled again and sat down in another chair, crossing his legs at the ankle. "Your mission, Howard, should you choose to undertake it, will be to go back in time, report to duty here at Headquarters, explain your mission to me, and then proceed to deliver back here a time machine which you will then proceed to steal from the Russians, after we fly you to Zurich to the hotel where the inventor stayed previously while he was conducting his bargaining. You will also, if possible, attempt to find out from the inventor what the secret is for his machine, so we can make another one after you get back. Ok?"

Bradley sat back in his chair, his

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brows furrowed in thought, scratching his ear with his left hand. The seconds ticked by silently.

"Er, Howard," the Director interrupted the silence. "Do you understand your mission?"

"Er, no, sir. Not at all. Er, sir, this mission sounds, rather, er, dangerous. Would you mind very much if someone *else* went on this one? After all, sir, I *have* just returned from another mission that I was on for the last four months."

Bradley watched uneasily as the Director's face grew red and angry. "No, no, Howard!" The Director pounded his fist in the air. "You've *got* to go back, because you already *did*! If you don't go back now, you'll ruin everything. We couldn't possibly send someone else!"

"Oh yes we could, sir. The other agent could steal the time machine instead of me, and—"

"No, no, no! Howard, you *already* reported back to me and explained the entire mission to me just two months ago. If we sent someone else back, it'd be silly. You can't possibly *not* go. You already have!"

"Oh no I haven't, sir." Bradley shook his head vigorously. "I was out on my previous assignment two months ago. If someone else reported to you back then saying he was me, he must obviously have been an imposter. The Russians, you see, could—"

"No, Howard, no! That's exactly what *I* thought when you first reported in here. I was *extremely* sceptical. But we checked you out very thoroughly, and—"

"Sir, I was *not* here two months ago. And this mission is not only dangerous, it's preposterous! There's no way you can make me go. It says here in the Professional Espionage Agents' Contract, Section 14—"

"*Damn* the stupid contract! You already signed, dammit. Or you *will* sign as soon as you get back here from the mission, before we send you off on it. You told me so distinctly, just two months ago. In fact, we had you sign the permission form again back then, just to be on the safe side."

Bradley put his head down and cradled it between his hands, moaning softly for a few moments. Then he pushed himself back in his chair, grasped both arms of it firmly and looked the Director in the eye.

"Ok, sir, let's try this again from the beginning. Two months ago a man walked into your office who resembled me and claimed to be me. Right?"

"Right."

"He told you a story about time travel and initially you did not believe him, right?"

"Right."

"And he managed to convince you that he was telling the truth, right? Ok, how?"

"We dosed him with sodium pentazoanate, of course."

"The truth drug, sir? Sir, that's

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extremely dangerous stuff. Why, if you'd given him only one and a half times too much, you could've killed him—or killed me, that is, maybe."

"Oh no, we were careful, Howard, don't worry. Just exactly the right dosage. Lie detectors, too, everything else we could think of. It was you, Howard. Besides, we had his time machine, too."

"Er, yes." Bradley leaned back and scratched his head again. "Then I presume you were able to take it apart and analyze its functions, and hence you no longer need—"

"Er, no, Howard." The Director shrugged perplexedly. "You *told* us we wouldn't be able to figure it out, and unfortunately you were right. We didn't want to break anything vital in it, so we couldn't get *too* deeply into it. After all, you need it some more, so as to be able to try to steal the secret of it from the original inventor and to report back here to start your mission."

"Er, let's not get started on *that* again." Howard frowned in concentration. "Ok, so he, or I, told you a story, and you checked it out under truth serum, and then you sent him off on the rest of his mission. Ok, then what did he tell you?"

The Director shrugged. "Basically, Howard, exactly what I am telling you now. Naturally. Plus, he was met at this Headquarters, this morning, later, by his alter ego returning safely from the mission, and got onto the second time machine himself and pressed the right buttons for two months ago and arrived here in Headquarters. In the Research Lab, of course. They were *very* surprised to see you."

"Er, yes, sir." Bradley frowned in concentration. "Hmm. Do you have any tapes, sir, of conversation with this, er, person?"

The Director smiled and glanced at his watch. "Yes, we have just enough time for that before you arrive back. Right back at my office, Howard."

"Yes," Howard Bradley thought as the tape recorder started up. "That's me all right." He listened on as his voice detailed the plan he had just heard, interrupted from time to time by the voice of the Director raising objections. The Director, back in his seat, glanced at his watch from time to time, tapping his foot nervously against the desk edge. The phone rang and the Director cut off the recording before its end.

"Yes?" The Director frowned intently as he listened to the caller. "More Russians? Good. Did they bring it with them?" He listened intently some more. "Good. That's exactly what we expected. Are all the original group still there?" More listening. "Ok, keep in touch with me about what happens. Bye."

The Director returned the phone to its cradle and turned to face Bradley again. "Ok, Howard, lis-

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ten carefully. The Russians are in Zurich at the same hotel where the inventor stayed three months ago, in the same suite of rooms. They moved in yesterday. Today an air-freight shipment arrived there and they brought it into the hotel. It only just fit through the doors, the same dimensions as the time machine when it's folded up. Ok? We have them under surveillance, though they removed the bugs that we put into that room two months ago so we don't know *exactly* what they're doing. We suspect that they are planning to send back that time machine to the time that the inventor was there negotiating, maybe to steal his blueprints, Ok? Just deduction, not firm knowledge. In their group they have Pavel Yurovich, the truth-drug expert, and Ivan Ivanovich."

"Ivan Ivanovich?" Bradley leaned forward attentively. "Their top spy?"

"Yes, indeed." The Director smiled. "*That* Ivanovich. Fluent in six languages and a master of disguise. We didn't recognize him, of course, but we got voiceprints as he went through Swiss Customs."

The Director glanced at his watch again. "Ok, Howard, time to go." He stood up, rewound the tape recorder on fast rewind, took out the tape reel, then took out another tape reel from another recorder below his desk, added a large manila envelope and handed them curtly to Bradley.

"All right, Howard, follow me," he commanded, heading back to the Lab. "You're due back any minute now." Bradley followed at a brisk trot, carrying the tape reels and the envelope.

"What *is* all this stuff, sir?" he asked as the Director turned in through the Lab doors. "What am I supposed to do with it?"

"The tape reels? One of them is you talking with me back two months ago, the one we were just listening to. The other is you talking with me just now. You're to take them back in time. And the envelope contains your detailed instructions. Be *very* careful to go back and forth to exactly the times indicated there. Your routing is on the initial sheet. Ok?" They turned in through the last doors and the Director motioned Bradley to be seated.

"What's supposed to be happening now?" he asked. There didn't seem to be anything different about the Lab, Bradley noted, just the two time-machine mock-ups inside each other, the chairs and the big digital clock on the wall.

"Quiet, Howard," the Director commanded. "Watch that clock up there and write down *exactly* when you arrive."

Bradley obediently took out his pen and some paper but nothing happened for several seconds. Then, suddenly, a large cubical object materialized in front of them, exactly like the mock-ups.

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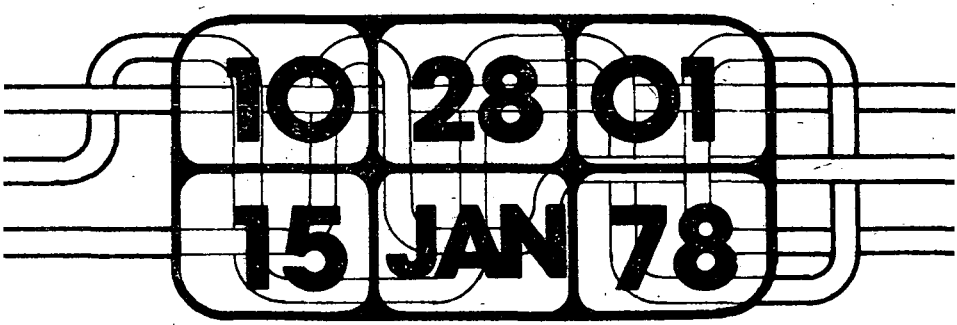

"10.26.01, on Jan. 15, 1978," he wrote down.

The doors opened and a man like himself jumped down, tugged at a very large object on the floor and rolled it out on its casters, pulling it off out of the way.

"Mission accomplished, sir," said the new arrival to the Director. The voice was exactly like his own and Bradley shivered. The face, too, was exactly like his own.

The Director shook hands vigorously with Bradley's double. "Congratulations, Howard! That was an excellent job you just did! Here, sign this," he added, thrusting a piece of paper at him.

The double shrugged, pulled out a pen and rapidly scribbled his signature. "I already signed this, you know," he remarked. "Well, I need to go back now and do the rest of the mission. Hi there," he added, talking to Bradley. "Feeling a little strange?"

Bradley was too stunned to reply. He watched in disbelief as the other man went back inside the machine, pressed a button to close the door, and suddenly—vanished. The whole thing vanished.

"Well, Howard?" asked the Director. "That's your future self. All right, help me get this time machine unfolded."

Bradley, still mentally numb, moved to comply. Right side, up. Back, up. Left side, up. Move inside, pull the top up. It was a lot

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easier with two people both helping, he reflected. The Director moved over to the buttons on the outside right-hand side and pushed the 'LOCK' button. There was a barely audible click as the locking mechanism went into place.

"Ok, Howard," said the Director. He moved over to the chair, quickly picking up the tapes and envelope from where Bradley had left them, and walked back inside the time machine. "Now, come inside and watch me set the buttons. You're supposed to arrive back at ten-thirty a.m., exactly, on November fifteenth last year." He set down the tapes and envelope and pressed buttons rapidly. "Does that check out, Howard?" He moved backward toward the door.

Bradley looked closely at the buttons. They seemed satisfactory. Suddenly the door clunked shut behind him. He wheeled around and—the Director vanished.

The room, too, looked odd as he gazed at it through the window in the doorway. The chairs were arranged differently, all of a sudden. And the time-machine mock-ups were not there. The clock on the wall, however, still said 10.30. But not 10.30 a.m. on January 15, 1978. It now read 10.30 on November 15, 1977.

This, thought Howard Bradley, was ridiculous. He hadn't even signed the permission form! The Director must have—yes—just pressed the 'SEND' button and *sent* him.

"Why should I?" he thought. Bradley scowled and pushed buttons. 10.31.00 on January 15, 1978. He moved his finger down to the 'SEND' button, hesitated—and pressed it.

The Director reappeared. The chairs and the mock-ups were where they were. The clock on the wall said 10.31.01 on January 15th again. Howard Bradley smiled to himself as he watched the Director's puzzled, scowling face.

As he watched, the Director strode to the right-hand side of the time machine, a grim expression on his face. The Director—vanished . . .

. . . . and re-appeared where he had been five seconds earlier, scowling and striding to the door. Then again he—vanished . . . .

Over and over again the Director vanished, reappeared where he had been and strode to the door, his finger outstretched. The clock on the wall, Howard noted, was endlessly repeating the same five-second interval, from 10.31.00 to 10.31.05.

This was bad, he thought, very bad. Why, he could starve to death, or die of old age! And no one would ever find him! No, that was silly. Its batteries would run down eventually, if it used batteries. What power souce did it use, anyway? And he could still use the control panel to send himself forward or backward in time. Forward or backward? He could just go for-

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ward in time to when he was supposed to finish the mission and claim it had been successful. No, that wouldn't work. The Director would find out the Russians still had their time machine. How about backward? He could go back and warn himself—no, that sounded complicated . . . .

Bradley paced to and fro inside the time machine, thinking as the seconds went by over and over again, and the Director endlessly strode toward the buttons on the door. The 'OPEN' button, of course! Any time he pressed it, the door would open some time within that five-second interval. It would just seem to the Director as if he hadn't been able to get to the 'SEND' button in time. And the 'SEND' button wouldn't work if the door were open.

Was that right? His eye fell on the big manila envelope. Maybe he should read the instructions first. Why not? He had all the time in the world. More, in fact.

Bradley sat down on the floor of the time machine and opened up the envelope. Too bad, he thought, that he couldn't play the tape recordings without a machine. The Director hadn't finished playing the one, he remembered. But were they correct in every way? The Director could, after all, have spliced out any material he didn't want Bradley to hear. With the resources of the world's greatest spy organization at his disposal, it would be child's play for him to alter the tapes, or even to create completely phony conversations out of computer recombinations of voicesounds.

Or to forge signatures. Bradley scowled as he pulled out the instructions and found a permission form with his own signature. He put it aside and started reading the plan.

The plan sounded a lot more sensible as he read through it carefully, though there were still a few puzzling loose ends. There was no mention, for instance, of his current predicament, so things must have happened differently last time. Or had they? The Director would not have known about what was happening now and there was no real need to tell him. Or perhaps the Director had known but had deliberately refrained from mentioning it. There was, after all, no mention of the Director sneakily pressing the 'SEND' button the first time, either. Bradley wrinkled his brows in puzzlement but finally went back to reading the instructions.

It was 10.50 on his watch when he finished; so twenty minutes must have gone by, he figured. The clock outside on the Lab wall still said 10.31.00 to 10.31.05, of course, over and over again. Well, pressing the 'OPEN' button would be the easiest way out. He timed it so as to occur just after 10.31.00 and stepped toward the door.

The Director, scowling, strode yet again toward the buttons on the right-hand side and pressed—the

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'CLOSE' button. The door started closing again, but Bradley jammed his foot in it and the elevator-like door opened up again.

"Howard Bradley! What are you doing back here so soon?" The Director glared at Bradley, trying to stare him down.

"Sir, I've been thinking." Bradley stared right back. "Why don't *you* go back and tell yourself about this mission, and then send—"

"No, Howard, no!" The Director stamped his foot, his right hand still poised near the buttons. "I don't *go* on missions! My job is to stay back here at Headquarters and *organize* missions! Plan! Organize! Motivate! I took Organization Theory courses in graduate school, Howard. That's why I'm up here and you're back there. Plan! Organize! Motivate! Besides, I *know* I didn't meet myself back two months ago. It'd be ridiculous!"

"Well, you could always do things differently this time, sir," Bradley argued. "Besides, why don't we just keep this time machine now we've got it instead of risking it back in the past? You know, if we'd thought a little before sending back the other Howard Bradley, we could've kept *two* time machines!"

"No, Howard, no." The Director shook his head. "We've got to do things exactly the way we did them last time if we possibly can. Otherwise, who knows what might happen? We've *got* to get that time machine away from the Russians. Look, Howard, *you've* only been thinking about this for an hour or so, but *I've* had a whole two months to think about all the ramifications. Believe me, I know what I'm talking about!

"Besides," he continued in a wheedling tone of voice, "you saw yourself come back, didn't you? Why, this is the safest mission you've ever been on! Guaranteed return!"

Twenty minutes later Howard Bradley was back in the time machine, ready to go. The Director had convinced him. He pressed the buttons on the dial for 10.32.00 on November 15, 1977 (a couple of minutes later than the original 10.30 a.m.; best not to risk colliding with himself, the Director had said); noted the time on the wall clock, 10.51.10, and pressed the 'SEND' button as the Director bade him farewell.

The Director vanished and—the loud wailing of the Research Lab's alarm siren filled the air. The door opened and Bradley saw, in front of him, two stern-faced guards with their weapons drawn.

"Hands up, whoever you are!" commanded one of the guards. "No unauthorized persons are allowed in here!"

Bradley obediently raised his hands. "Take me to the Director," he requested.

"That's exactly where you're going," the guard snarled. "He'll be

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very interested in seeing you."

What had gone wrong? thought Bradley as they marched him along the corridors. Of course! The first appearance of the time machine had alerted them, and the guards had been sent in during the next two minutes. They probably thought he was a Russian spy since the Russians had the only time machine. Well, he could explain things to the Director easily enough.

The Director was sitting at his polished oak desk, a stern expression on his face. "And who do you think *you* are?" he demanded.

"Howard Bradley, sir, reporting for duty. I just arrived here in a time machine from two months in the future. It is extremly important that you make a hotel reservation at the Zurich Hilton, in Suite five-hundred ten, as soon as possible and for as long a time as possible."

The Director leaned back in his seat and glared uncomprehendingly. "Rubbish!" he snorted. "Howard Bradley is out on assignment now. He couldn't possibly have gotten back here in this time, let alone in a Russian time machine. You, mister, are a Russian spy, traveling in a Russian time machine and cleverly disguised to resemble Howard Bradley. Well?"

Howard Bradley sighed to himself. This was going to be difficult. *Very* difficult.

It was six days later, November 21, 1977, and Howard Bradley smiled happily to himself. An empty time machine had just materialized in the Zurich Hilton Hotel, Suite 510, much to the Director's amazement, just an hour after the American agents in Switzerland had moved in and cleared a free area, according to telephoned reports.

They had immediately folded it up, packed it in a box and manhandled it out of the building; and it was now being flown across the Atlantic by military jet. Everything was going very well, Bradley reflected. Everything was going exactly as planned.

The hotel, for instance, had originally been booked solid right past New Year's, with the Russians reserving Suite 510 for January 12th and all the rest of 1978. But an unexpected cancellation had enabled them to book the room for November 20th through the 22nd. A strange quirk of fate, that cancellation, thought Bradley. Or was it?

Meanwhile, the Agency's scientists had been busily disassembling the time machine, stripping it down to basics but, just as Bradley had predicted, they couldn't figure it out. And the Director had insisted, very firmly, that the basic working parts should not be handled in any way that would risk their destruction. Bradley shrugged to himself and settled back to catch up on some reading.

A few hours later Bradley's office phone rang. "It's here, Howard," said the Director's voice.

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'Comé on over to the Research Lab ınd it'll be up the freight elevator in ust a couple of minutes.''

Bradley whistled to himself as he trolled over to the Lab. Everything ıad gone very nicely. The unpleasnt effects of the sodium pentazoante had long since worn off, the Dector had bought him some new lothes and everything had worked ut exactly as planned. He walked ı the Lab door and found the Dector in there already, tapping his ɔot nervously.

''Good, Howard,'' he remarked. Everything is right on time. The ıen should be here soon. We're all ɛt for you to take it forward in me.''

Bradley looked around observntly. The time machine had been ɛassembled a few feet from where ɛ had arrived in it, in exactly the ıme location that he had seen his ɔuble arrive before. The Director, ɛ remembered, had included exact ɛational information in his packet ɛ instructions. The clock on the all read a little after four in the afrnoon, 16.02.15, November 21,)77.

The door at the other end of the ɔom opened and four workmen heeled in a big container, seven et by seven by two. They put it ɔwn carefully, unwrapped it and, the Director's instructions, ıeeled it along, up and into the her time machine.

The Director clambered up on top the folded time machine and checked the setting on the outer one. ''Your double arrived at exactly 10.28.01 on January fifteenth, right, Howard?'' Bradley nodded. ''Good,'' continued the Director, climbing out. ''Now remember, Howard, be sure to do things exactly as before. We don't want to foul things up.''

''Sir, couldn't we just send the one time machine back empty by pressing the button?'' Bradley asked.

''Oh, no.'' The Director frowned impatiently. ''We've already got them inside each other now anyway. And besides, very possibly your arrival there is exactly what'll be needed to convince your earlier self that it's safe to go. Ok, Howard, let's get a move on.

''I'm going to send you off at exactly 16.06.00 and then you reset the numbers to come back five seconds later at 16.06.05. Right?''

Bradley shrugged and climbed up on top of the inner time machine. The Director pushed the 'CLOSE' button. The doors closed, then he waited carefully, watching the clock, reached out for the 'SEND' button at exactly 16.06.00 and—the Director vanished.

Bradley quickly readjusted buttons for 16.06.05, pressed the 'OPEN' button, jumped down and pulled out the folded-up time machine, rolling it out on its casters to a nearby spot.

''Mission accomplished, sir,'' he reported to the Director.

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The Director shook his hand. "Congratulations, Howard! That was an excellent job you just did! Here, sign this." He thrust a permission form into Bradley's hands.

Bradley looked at it, shrugged, and pulled out a pen to sign it. "I already signed this, you know," he remarked. "Well, I need to go back now and do the rest of the mission."

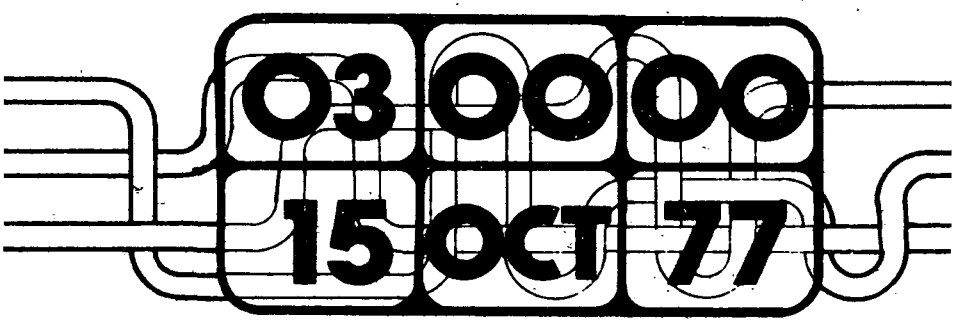
Over by the Director he noticed—his earlier self. Another Howard Bradley, mouth agape. "Hi, there," he remarked to the double. "Feeling a little strange?"

There was no reply and Bradley walked back inside the time machine, pressed the 'CLOSE' button, double-checked the time setting and pressed 'SEND' again. The January scene vanished and the Director reappeared, almost exactly where Bradley had left him earlier.

"Good work, Howard," called the Director. Bradley opened the door and walked out and the Director instructed the workmen to fold up and pack the time machine he had come back in.

"Ok, Howard," the Director instructed. "Grab your suitcase we're off to Switzerland by military jet. Up, up into the wild blue yonder!"

It was twelve hours later. They were in a hotel room in Zurich and Howard Bradley was having last-minute qualms. It was 10.02 in the



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morning, European time, November 22, 1977, and the blinds and curtains were drawn tight against the morning sunlight.

"All right, Howard," the Director was saying. "We've adjusted the little lever down below for the six hours' difference between European time and Eastern Standard Time. Let's check over your equipment. Pistol, ok. Dart-gun with three needles of truth-serum, ok. Flashlight, ok. Handcuffs, rope coils, ok. Two cans of emergency food rations and water, ok. Suitcase with extra supplies of everything, ok. Empty suitcase, ok. List of instructions, ok.

"Now, I'll go over the plan of instructions one more time. You'll go back to four in the morning on October fifteenth, the last night that the inventor stayed in this suite before checking out. Remember, keep your finger on the 'SEND' button. That'll keep you stuck at one instant of time while you look around to see if things are safe without being seen except for a flickering instant of time. If it's not safe, go back an hour earlier, or another hour earlier, or a day earlier. Go earlier, because then you won't have been seen yet. Okay?

"When you go back, you should see one or possibly more other time machines. You're to send one of them back, empty, to the time we picked it up, at 14.00.00 on November twentieth, two days ago, just after our agents first checked into the hotel. We know where it landed, so we've put your machine facing its door, a few feet away. You'll need to open it, set the time, get out, close it and send it. Right?

"After that, you're on your own. Send back any other time machines you can lay your hands on, or any blueprints, and come back yourself, to 10.10.00 today, November twenty-second. Be very careful, the Russians may be sending their own spy back. *Don't* try to kidnap the inventor. Get back first and then *I'll* decide if the risks are worth it. Ok?

"You'll be arriving back just a few minutes after we send you and then we'll have to pack everything up quickly so as to be out of the room by the eleven a.m. hotel checkout time."

"Er, sir," said Bradley. "I've been thinking. The instructions have been *very* specific prior to this point but now they seem to have all kinds of contingency statements in them, as though your future self didn't know exactly what had happened except for the earlier time machine being sent back. And there's *no* mention in the instructions of what happened after I get back, or am supposed to get back. Why? Was the mission successful? Will it be? Will I get back?

"You know, if I get back, wouldn't your future self have *told* me about it, so as to motivate me? Sir," he continued, quietly and matter-of-factly, "I think I'm going to die on this mission."

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He is one of over 1,400 scientists supported by the American Heart Association who are fighting for your life.

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When a Heart Association volunteer asks for your money, think of the 1,400 scientific investigators. Help them fight for your life.

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The Director shook his head. "No, Howard, you're *not* going to die. I guarantee it. Things *are* going to work out as planned. Howard," he improvised, "when you get back, I'm going to be *sure* that my future self does not inform your earlier self that the mission has been successful.

"Now, Howard," he continued quickly. "It's almost time to go. I'm going to close your door and turn off the lights, as we planned, to accommodate your eyes to the blackness at four a.m., and then I'm going to count down to zero. Keep your finger near the 'SEND' button and your other hand on the flashlight. Lights off now; seven, six, five, four, three, two, one, SEND!"

Bradley pushed the 'SEND' button, keeping it jammed down firmly, and—the lights all went on again, very brightly. He put the flashlight back in his pocket and peered around warily, still keeping his finger on the button. No time machines out there, nothing but ordinary hotel furniture. The bed in the next room of the suite looked slept in, very rumpled, and Bradley could see little marks from the casters in a square pattern where the other time machine ought to be. The carpet looked as if it had recently been walked on, and there was a button and a torn piece of colored material on the floor nearby.

He cautiously removed his finger from the 'SEND' button. Nothing was different except he could see the curtains rippling gently above the air current from the hotel heating vent. Very little noise, too. He peered around some more—still nothing—and pressed the 'OPEN' button. Nothing. He walked around, cautiously. There were caster marks over on the left, too, in another square pattern. There was a file cabinet, too, open with nothing in it. No people, no one. The bed definitely looked slept in. The clock on the wall said 4.02 a.m.

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Ok, try again. He came back in, closed the door, set the button for 3 a.m., and pressed 'SEND,' holding it down hard.

The lights—were still on. A time machine was in front of him, open. And over to the right two men were locked together in a struggle, frozen in mid-action. A tough-looking man in dark clothes and an older, white-haired man in pajamas. Ivan Ivanovich and Helmut Heinrich! The Russian spy must be kidnapping the inventor! (Or vice versa? Implausible. They both were about two hundred pounds, like himself, Bradley estimated, but the older man would be no match in a struggle.)

Neither of them were looking in his direction, fortunately, so neither of them would see him. Bradley craned his neck, still holding tight to the 'SEND' button, and saw, over on the left, what looked like the corner of a third time machine. They really should design these things with glass all around, he thought, and a 'SEND' button that could be locked down when needed. Well, too late now to think of that.

Ok, 2 a.m., see what's going on an hour earlier. Bradley pressed the 2 button and—the lights went out. There was only a slight glow from a night-light, Bradley noted, as his eyes adjusted to the gloom: the two struggling men were no longer there nor was the time machine in front of him. But the one over on the left was still there, or its corner was. Over to the right, in the bedroom, the inventor appeared to be asleep in his bed. Bradley relaxed the 'SEND' button for a few moments before jamming it back and heard a loud snoring sound. Ok, the Russian had not yet arrived. Try 2.45 a.m.

Bradley pushed buttons again. 2.45, 'SEND' and—the time machine in front of him reappeared, its door still open. The lights were still off, the inventor was still in bed, but over to the left was the faint glow from a different light—a flashlight, perhaps? The third time machine's corner was still there and Bradley, craning his neck, caught a glimpse of the back of the man in dark clothing over where the empty file cabinet had been an hour and a quarter later at 4 a.m.

Bradley risked a second of time with his finger off the 'SEND' button before jamming it on again and heard the faint rustling of papers from his left and the inventor's loud snoring from his right. He risked two seconds, then three, then five—no problems. He tiptoed to the door to risk a better view, then darted back to the 'SEND' button. The Russian was looking straight away from him, into the file cabinet—looking for blueprints, perhaps?

If he could just cross the intervening six feet to the open time machine, Bradley estimated, he would be shielded from view by its left side, could set the buttons, duck

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around to the right-hand side, be shielded from view again, and close its door and sent it to November 20th, when it had arrived earlier. It would take no more than twelve seconds, Bradley estimated, if he did it all without fumbling, and then he could duck back inside his own time machine, press the 'SEND' button to freeze time again and consider his next move.

Ok, testing. Bradley tried 15 seconds with the 'SEND' button off. No reaction, good. He pressed 'SEND' to go back to 2.45.00 again, then pressed the 'OPEN' button, walked quietly out, across and into the nearby time machine, flashlight ready but not on; flashed the light briefly, pressed 14.00.00 for November 20, 1977; walked quietly out and around to the right-hand side and prepared to press 'CLOSE' and 'SEND.'

'CLOSE;' the door closed, with a clunk. 'SEND;' the time machine vanished and—the Russian wheeled around, startled by the noise of the door closing, as Bradley dived for cover within his own time machine.

Bang! The Russian fired wildly in Bradley's direction. Bang! Bradley fired back. Bang! Bang! Bang! Bang! Two more shots by each of them, no hits.

"What the hell is going on around here?" came a voice in guttural Swiss-accented German. It was the inventor, roused from his sleep by the noise. The lights all went on and Bradley saw him over to the right in his pajamas, his hand on the light switch.

Bang! Bang! Another miss by each of them. The Russian was getting too damn close for comfort, Bradley thought. This bullet had smashed into the metal of the time machine only six inches to his right.

"What the hell are you gangsters doing shooting up my hotel room?" the inventor demanded. "Why is this second time machine in here? Who do you think you are, you idiots?" He was standing in the bedroom doorway, shaking his walking stick at them, oblivious to the danger in his anger. Bradley and Ivanovich ignored him.

Bang! The Russian had shot at Bradley's time machine instead of at Bradley, at the motor on the right-hand side, and a shower of blue sparks shot up in the air as the bullet ploughed through the machinery. Too late Bradley pressed the 'CLOSE' button, the 'SEND' button, the 'OPEN' button in wild succession. None of them worked.

"You've wrecked my time machine, you maniacs!" the inventor screamed. "It's worth a billion dollars!"

Bang! Bradley fired at the Russian again, barely missing. Only one bullet left now, he thought. Better make the next one count, there might not be time to reload.

"Stop that this instant!" yelled the inventor. "You're destroying hotel property! You'll go to jail until you rot if I have anything to

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say about it!"

Bradley crouched down, aiming, waiting for the Russian to move into range. He saw the Russian's gun hand move into view, squeezed the trigger and—

Bang! "Ow!" He saw the gun fall from the Russian's hand, dropped his own gun and pulled out his dart-gun, moving in for the kill. One dart to make the Russian talk, two darts of truth serum to kill him.

Thwack! Excruciating pain seared at Bradley's nerves as a dart needled into his right thigh. Gritting his teeth to ignore the pain, Bradley aimed, squeezed the trigger and— "Ow!" The Russian screamed in pain.

"Stop this at once!" commanded the inventor, striding into the main room and brandishing his walking-stick as if it were a weapon. Bradley and the Russian circled him nervously, each trying to keep the inventor between himself and the other man. The Russian had a dart-gun too, Bradley noted, probably a three-dart Israeli-made T-33 like his own if intelligence reports were correct, and he was holding it left-handed while a trickle of blood oozed down from his right hand. A dart was still sticking in the Russian's left leg.

Thwack! Thwack! Two darts buried themselves in the furniture on the opposite sides of the room as the two gunmen circled the inventor between them. Only one dart left, thought Bradley, then he'd have to go to hand-to-hand combat.

"Who are *you*?" the inventor demanded again. "What are you doing here?"

Bradley felt a terrible urge to tell the truth coursing through his veins. "I am an American spy, Howard Bradley," he stated, talking in German so the inventor could understand. "I came back here in time to steal the Russian's time machine and any blueprints I could find."

"And *you*?" demanded the inventor, pointing his cane at the Russian. "Why did *you* come here?"

"I am a Russian spy, Ivan Ivanovich," admitted Bradley's opposite number. "I came down here from January 15th, 1978, in the time machine you sold us so as to steal the time-machine's blueprints and kidnap you. Then that American spy made *my* time machine go off in the future somewhere, so I started shooting at him."

"You maniacs!" yelled the inventor. "You can't do this to me. This is Swiss territory and I am a Swiss citizen! You'll rot in jail for a thousand years when the police get here! Destruction of hotel property! Attempted kidnapping! Attempted theft of trade secrets!

"And what," he continued, turning and pointing accusingly at Bradley's ruined machine, "is the other time machine doing here? How did *it* get here?"

"I cannot tell a lie," stated Brad-

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ley. "I stole the Russian's time machine that he came back here in, sent it forward in time to November 20th, then we folded it, flew it across the Atlantic to our Headquarters, sent it forward to January 15th inside a later version of itself, and I unfolded it, came back in time to November 15th to inform my boss of this mission, then used it briefly to send its earlier self up to January 15th next year, came back to November 21st, we folded it, flew it back across the Atlantic and brought it into this hotel room, and then took it back in time to now so I could steal the Russian's time machine and any other time machines I could lay my hands on."

"You idiot!" shouted the inventor: "You're twisting the structure of time back on itself like a pretzel! And you think you could steal the original time machine, do you? You couldn't, you fool! If you tried, all this would never have happened!"

"Shut up!" Ivanovich interrupted. "Where are those blueprints, you old fool? How does the time machine work?"

"I'm not going to tell you and you're stupid if you think I would!" The inventor turned toward the Russian, defiantly staring him down.

"We have ways to make you talk," Ivanovich retorted. "Answer, before I count to five. One, two, three, four . . . ."

"Now's my chance to hit the Russian," thought Bradley, "while he'd distracted. Aim, fire and . . . .

Two darts suddenly thwacked into the inventor as he screamed in pain.

"You fool, you've killed him!" shouted Bradley.

"No! You!" yelled the Russian. "It was *your* dart that did it! *My* dart was just to make him talk!"

"Your dart!" "Your dart!" The two spies rushed at each other, wrestling each other down to the floor as they struggled for a death-grip.

"You've killed me! You've killed me!" screamed the inventor. He strode over to where they lay struggling, whacking impartially at them with his cane. "Take that, you assassins! Take that! And that! And that!" as he hit them savage blows on the arms, legs and head.

"Where are the blueprints?" demanded Ivanovich hoarsely. "Tell the truth!"

"I burned them before I came here to the hotel to negotiate! The knowledge is all up here in my head! It will die with me when I die!

"Oh, no I won't!" The inventor suddenly strode over to the other time machine, pressing its 'OPEN' button.

"You stupid superpowers can't be trusted with an invention as powerful as this!" The time machine's door opened and he strode inside to the buttons. "I'll go back in time and warn myself never to reveal the secret of this. It's the

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only way to unkill myself!''

The door closed on him as the Russian's hands tightened in a death-grip around Bradley's neck and . . . .

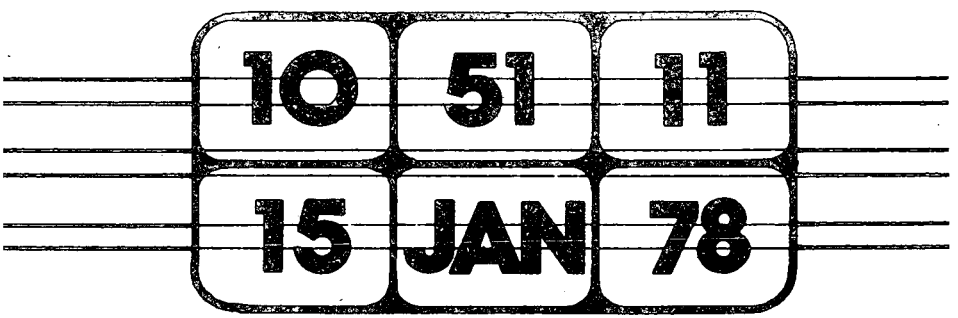
. . . The Russian spy vanished and Howard Bradley suddenly found himself standing up instead of on the floor, falling two inches downward in a sudden jolt. He hurt all over, on his head, arms, legs and right thigh, and his neck. He was in the Research Lab again, Bradley noted in puzzlement, at the American Headquarters. The two time-machine mock-ups had vanished but everything else was unchanged and the digital clock on the wall read 10.51.11, on January 15, 1978, just one second later than when he had set out.

But set out on what? He scratched his head in puzzlement as he noticed the Director striding toward him with outstretched hand.

The Director shook hands vigorously. ''Congratulations, Howard! That was an excellent job you just did this morning!''

''Excellent job, sir? On what?''

''Er, on. . . .'' The Director looked baffled. ''An excellent job, anyway. . . .'' The Director's voice trailed away and he looked distractedly up at the wall clock as if that somehow held the key to the situation. ''10.51.35, Howard, right on time. Er, Howard—why don't you just take the rest of the day off, since you're back so soon?'' ☆



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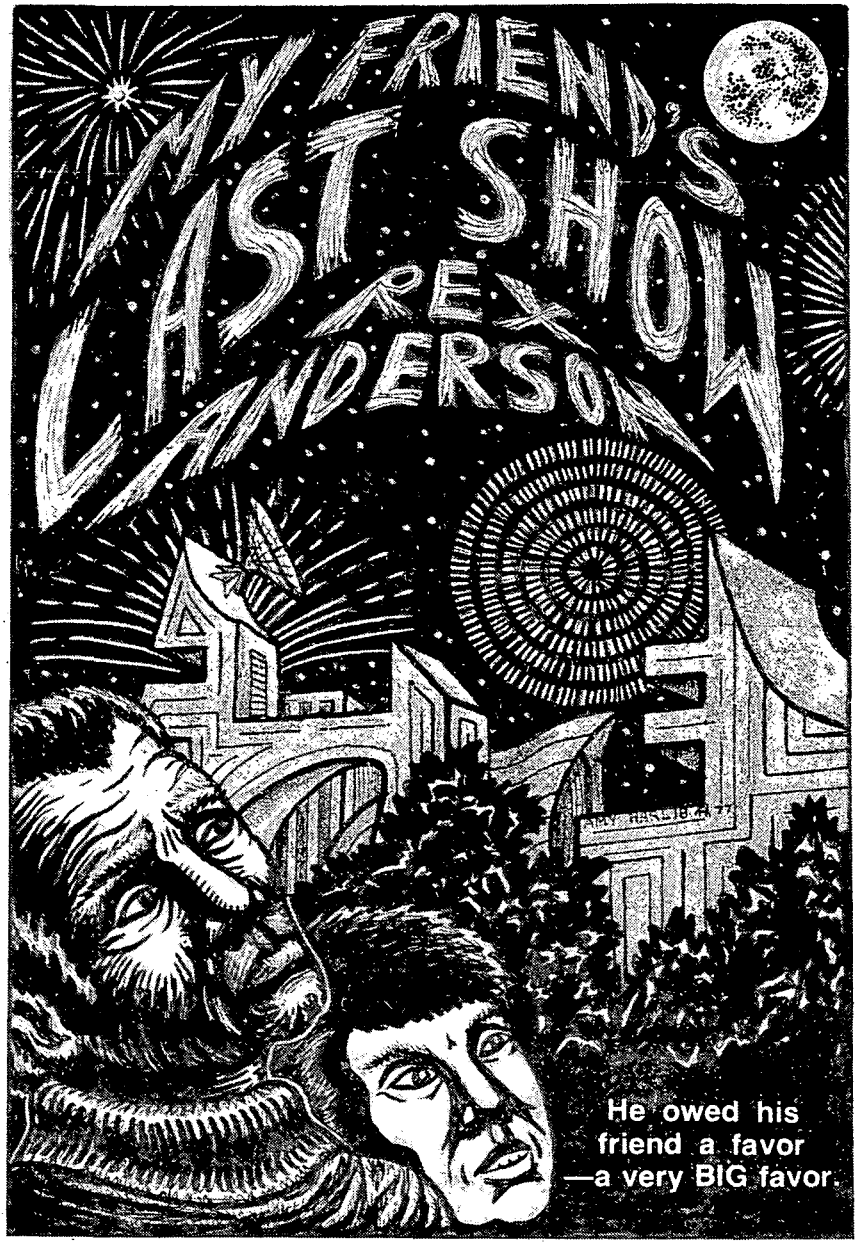

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The first silver cannister is labeled "Scarlet Seabird" in Mr. Ross's black, definite handwriting. When I press the button set into the handrail of the grandstand, there is a sudden flare of rocket and the cannister begins to lift. Slowly at first, and then rapidly faster against the weak Lunar gravity, it lifts higher and higher. In only moments, it is just a spark that is almost lost against the stars. And then, in eerie silence, it blossoms and blossoms and blossoms. It seems that the whole sky is covered with shining, glowing scarlet wings. In my earphones, I hear the indrawn breaths of the other people around me. High, high above, kilometers wide now, Scarlet Seabird flies.

It was all my fault that the bad things happened to Mr. Ross. It was just my big mouth that did it. I wanted to be a big-shot.

It was on the afternoon of the first day at the Lunar Departure Processing Center when my Aunt Mavril called. She was a reporter for the *Washington Post* and I usually just got a Christmas card and a dollar from her. But when they called me to the telephone in the Departure Center office, her face in the screen was all smiles and she acted as if I were her very favorite.

"You're going to be the youngest person who ever went to the Moon," she said. "Just nine. And so you're News! I'm going to interview you right now, Chuck."

"You're going to put me in the paper?" I asked, all excited. I was so excited that I told her all about Mr. Ross, too. I wish so much that I hadn't.

The second cannister is "Wonderful Dragon." It goes up into the Lunar sky on its tiny rocket engine, trailing sparks of blue and gold, aiming haphazardly at Scarlet Seabird which drifts effortlessly, kilometers high, slowly, slowly moving higher and higher. High above, so high that we all thought that it must be defective, Wonderful Dragon finally explodes from a tiny sparkle into enormous bursts of blue and gold that shape into jagged teeth and claws and spiney tail and forking, furious tongue.

All of the other people going to the Moon were families or were so busy with their own business that it was just natural that old Mr. Ross and young me should be friends. So that night, he and I ate dinner together and talked. I kept quiet about my surprise, though.

"My dad is Vice-Administrator of the Lunar Colony," I said. "And my mother's a lawyer. And now, finally, I'm going to get to go live with them. On the Moon."

Mr. Ross's face went very young when he smiled. And he smiled a lot—until later, when he found out what I had done. "When I was your age," he said, "nobody did anything but snicker when someone said something about going to the Moon. I guess I snickered, too."

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He was a sculptor, working in wood and clay and steel and aluminum and glass and, I guess, just about anything that had a form within it. And now that he was eighty-nine, he was going to go live on the Moon.

"They say I'll be able to move around up there just like a kid of sixty." He looked up at the ceiling of the dining hall as if he could see through it to the Moon.

"Well, what about your family?" I asked. "Won't they miss you?"

He looked at me and laughed. "Yeah, well, I guess they will. But not the right way, I'm afraid."

The dessert was some kind of green, gluey pudding and now Mr. Ross used the handle of a spoon and worked at it quickly. His hands and arms were very big and strong-looking, but they worked gently and precisely.

"You must not have any family," I said.

"Well, Chuck, I have relatives, you might say."

"Whatever you're doing with that pudding is the best thing I can think of to do with it, Mr. Ross. It sure isn't worth eating. But you sure have lost me with what you said."

"I don't want you to be lost." He worked on with the spoon for a while. Then he said, "I don't have a wife or sons or daughters. I don't have anybody close. I guess I loved too many times. And none of the loves was still here when it came time to run away to the Moon. The relatives I've got are just waiting around for me to die. To get my money."

"I'm still kind of lost," I said.

"You'll understand sometime," he said, sliding his dessert bowl across to me. Looking up out of it was my own face, done in the green pudding.

I press the button that sets off "Silver Spectacle" and it rises and far, far above, throws out kilometers and kilometers of sparkling silver threads into the dark, airless sky.

We went outside then, into the night, to the gardens around the Departure Processing Center. The Moon seemed bigger and brighter than ever before.

"They all needed me," Mr. Ross said. "But they needed what I had, not what I was. When Nephew Tommy needed braces, or when Jean-Anne had to go to an analyst, and so on and so on, Uncle Paul was always there with the cash. Some of it, they even paid back for a little while. Sometimes they even thanked me."

He was silent then and I finally said, "I wish that hadn't been just pudding. Maybe after we get to the Moon, you'll do one that'll last longer than just green pudding."

Mr. Ross laughed and messed up my hair. "Eternal Art. That's what everyone always wants."

"Well, there's nothing wrong with eternal, is there? Why don't you do a great big thing on one of

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he Moon mountains, Mr. Ross?"

He laughed again. "I used to hink about doing just that. But now I like the pudding things better."

"I'll try to understand that, too," I said.

"Colors, 1945," goes up as I press another button. It expands across the black sky like a million rainbows. Colors I never heard of or thought of drift and float.

"A long time ago, I decided it," Mr. Ross said. "I was with friends, out on the beach in the summer, drinking wine and saying good things and thinking good things and looking at the Moon. And I decided then that, someday, I was going to take all my money and turn everything I could into money and use it to run away to the Moon and live here for as much longer as I had and then be buried there. Tommy's braces and Mary Ellen's college and all of those things would just have to take care of themselves. I decided that it was my money and I'd spend it on myself, no matter how guilty it might make me feel."

"I'm glad you're my friend," I said. "I'm glad I don't have to go to the Moon by myself."

"After we get to the Moon, I'll make something for you out of something just a little more eternal than green pudding, Chuck. Maybe it'll even be eternal enough so that someday you can use it to help you get something you want very, very much."

I didn't understand.

"Well, the last year and a half has been just one big garage sale, Chuck. I've sold things I thought I never could part with. But now my last art show's all put together and finished and my ticket's paid for and I'm on my way. I'm on my way."

"Won't you miss your relatives just a little?"

He just laughed. "I hope you'll never really understand that."

"Wonderful Dragon, high and far away, is fading, fading, tattering away. The incredibly thin film has unfurled and scattered brilliant light for many minutes. Now it is pulling apart, ending. I press the button for "Flamingo Summer, 1976," but I don't see its little rocket engine flame and lift because there are tears in my eyes and when you cry in an air-suit, you just have to wait a while. Finally, though, I can see again, and I watch the flamingo arc across the Lunar skies.

And the next day, I began to understand about Mr. Ross's family.

Each morning of the five days it took at the Lunar Departure Processing Station was filled with all kinds of medical tests. Finally, I got through for the day and went racing through the living area to go to the shop where there were newspapers for sale.

Mr. Ross was sitting in the lobby and I saw the headlines of the newspaper he held before I saw his face.

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"YOUNGEST AND OLDEST LUNAR/BOUND TOGETHER,"

the headlines said. And there were big pictures of both Mr. Ross and me from the Departure Center's files.

"We're in the papers," I yelled.

And then Mr. Ross looked at me. For a long time, he looked at me. And then he smiled. Only this time the smile didn't make him look young and new. It was a different kind of smile.

"Yes, we are, Chuck," he said, folding the newspaper and reaching out to mess up my hair. "We're in the papers. We waited too long to run away and now we're in the papers."

That afternoon his relatives came. With lawyers. Mr. Ross went away with them, looking very, very old. A little later, I watched as his crates were unloaded from the Moonship and stored away.

"Shimmering Star" is next. It rockets up from the dead floor of the Moon and lifts gossamer blue and yellow and silver brilliances over the sky.

"It's what they call 'incompetence,' " my mother said, explaining it to me after I was on the Moon. "It's a legal term used for when someone isn't able to take care of his own business any longer. For when an old person starts doing silly, senile things."

"Going away to the Moon isn't incompetent," I said, angry that I was crying where someone could see me.

"Red and White Dreams" goes up now, as I touch the ignition button. Scarlet Seabird has disappeared into tattered, drifting mists. Wonderful Dragon is a shimmering after-image.

My allowance was five dollars a week. A real letter to Earth cost almost a dollar a page.

Dear Aunt Mavril,
This was all my fault. I shouldn't have blabbed about Mr. Ross so you'd put him in the papers and his relatives would find him. But isn't there anything somebody can do? This postage is going to cost me a lot of money, but here's what happened and what Mr. Ross really wanted. . . .

Dear Senator Pyrimen,
My name is Charles Burke and I'm the youngest person on the Moon and I hope you'll read my letter yourself and help. . . .

Dear Mr. President,
I am the youngest person on the Moon and hope you can take time from your busy day to read my letter and maybe do something to help Mr. Ross. . . .

"Running and Playing" goes into the Lunar sky now. It's all yellow and red streamers, lifting and playing and shimmering.

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Dear Mr. Hardesty,

My father says you own the biggest magazine in the world. I hope you'll listen to my problem. I'm the youngest person on the Moon and I only say that so that maybe it will attract your attention, like human interest, so something can be done for my friend, Mr. Ross. I wrote to the President and a lot of senators and everybody, but it just seems that nobody cares. . . .

''Blue Winter Storm'' rockets into dark sky, lighting it with jagged uds and electrical snowfall.

She came to our apartment in the ning, almost six months after I to the Moon.

'Youre Charles Burke,'' the ght, pretty, dark-haired lady said, ile behind her a man fiddled h a camera and meters and wires l dials.

''I'm Ilona Mosher, with the lumbia Broadcasting System,'' said, turning her smile toward mother and father. ''With your mission, I want to interview uck. About Paul Ross.''

'My letters finally worked!'' I led happily.

'Letters?'' Ilona Mosher said, zzled. ''I don't know about any ers. But I do know that you're youngest person on the Moon l that you were a friend of Paul ss. He was a very well-known st and, now that he's dead, we want to do a story on your friendship. An old, old man and a young. . . .''

''What did you say?'' I shouted at her.

''Twilight Thought'' is the next cannister. It is a warm mixture of beiges and greens and dusky, burnt oranges. It's not bright and toy-like like most of the others. But it is beautiful against the dark sky.

The judge pounded for quiet. ''In view of all the unusual publicity which has surrounded this case of the probate of the estate of Paul Ross, I am going to ask a favor of the attorneys.''

After talking with them in a low voice, the judge said, ''Because of the youth of the young man who has made such a long journey to come here as a 'friend of the court,' the attorneys have agreed that I may talk with him myself, in my chambers for a time. Court will be in recess for thirty minutes.''

''Autumn Unicorn'' flies out into the airless sky. It is all scintillating whites and pearls, with golden hooves and silver horn and red, red mouth and eyes of glowing green.

I wished that I were back on the Moon again when the judge said he was ready to announce his decision. My mother had told me again and again what would happen.

I hated the smiling faces of Mr. Ross's relatives who were about to get his money. Money they were going to get just because they had said he was a crazy old man.

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And sure enough, the judge said, "Under the laws of this state, the court has no choice but to find that the estate of Paul Ross is to be divided among his nearest surviving relatives, his three nephews and two nieces."

There was hubbub in the courtroom. The relatives all smiled and hugged each other. The newsmen worked their cameras and recorders.

The judge pounded his gavel.

"This court is not used to such uproar," he said when he could be heard. "We'll have no more of it until I have quite finished."

I wished I were gone.

"It is within the province of this court to direct that the estate first settle debts of the deceased bef the settlement to the heirs and honor the last wishes of the ceased."

The nieces and nephews shr ged.

The show is almost over w now. Even if it's a year late, thi Mr. Ross's show. He wanted it. planned it. He built the little ro ets and fitted their interiors w all their beauty and fineness.

Now I send off "Spring Rai and the sky fills with sparkling el trical droplets.

There is just one more cannis left and there are tears in my e again.

The relatives. Surely, they watching this from Earth. Everyo else is. I hope they're finally rea ing that Mr. Ross was more t just Tommy's braces and th other things they wanted.

The crates of cannisters weig a lot. But there was still a lot money left after their shipp charges were paid. Mr. Ross planned to use that money to l on.

The last cannister is mar "Friendship." There are so m tears in my eyes now that I have feel for the button that sets it off.

I think how the judge smi when I told him how much Ross had wanted to be buried the Moon.

The lead-lined casket and v were very, very heavy and wonc fully expensive to ship.

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THE GOLDEN AGE

You've got to be a believer!"
— D.D. Harriman in "The Man Who Sold the Moon"

EDITING A SCIENCE-FICTION magazine is more than a job. It is a vocation.

Oh, there have been those who eated it as just a job. But they enerally haven't lasted very long, or have they been long remembered. Only those who have shown genuine love for science fiction ave been honored in its annals.

One might assume that being osen to edit GALAXY would be occasion of great pride and satisction to the one so honored. And is. But that pride and satisfaction mixed with more than a little mility. It is impossible to stand in e company of such great predessors as H.L. Gold and Fredik Pohl and Jim Baen and *not* el humility.

As editor of GALAXY, I know at whatever success I may achieve ill depend not only on doing a job ell in the ordinary sense of the ord, but on living up to the duties manded only of a science-fiction litor.

A science-fiction editor, unlike editors in many another field, can never depend entirely on knowledge or attitudes developed in the past. He has a responsibility to know how science fiction is developing as a genre, to contribute as best he can to furthering that development, to perceive new literary frontiers and recognize and encourage the writers who explore them.

Most forms of popular literature are *static* forms. Westerns, detective stories, gothic romances and the like have been written in pretty much the same way for decades, even for generations. However well they say it, they rarely have anything *new* to say.

But science fiction is an *evolving* form of literature. Like other forms, it has its roots in the past—as far back as (take your pick) H.G. Wells, Jules Verne or Mary Shelley. But it is never completely *bound* by the past. No sooner do mainstream critics complain that "science has caught up with science fiction" than sf breaks out in entirely new directions.

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Many people think of literary evolution only in terms of literary techniques—old wine in new bottles. But the strength of science fiction, much as it has benefited from advances in style and narrative, has always been in its *thematic* evolution. It is the literature of man in relation to change, and as human society itself evolves, the number of imaginable futures multiplies. We must learn to assimilate not only new possibilities, but new *attitudes* about those possibilities.

People look on science fiction as entertainment, and it is. But it is entertainment for people who *think*. In what other branch of popular literature could there be an audience for a novel like Ursula K. LeGuin's *The Dispossessed,* the first utopian novel that is really a *novel*? Where else but in a magazine like GALAXY would readers take in their stride the strange customs and moralities that are normal in the future imagined by John Varley?

Among some older readers of science fiction, there is still talk of the Golden Age of the 1940's, when under the late John W. Campbell, the genre first began to take itself seriously—and win the beginnings of serious recognition.

But the Golden Age is really *now*. More people are reading science fiction than ever before, and they have better science fiction to read than ever before. The growing acceptance of sf and the increasing quality of writing in the genre are even more important than th much-publicized college courses.

And the best is perhaps yet to be Last month in these pages, two re viewers offered contrasting reaction to *Star Wars*. One called it an imag inative breakthrough in science fiction movies; the other a cliche ridden space opera. Both wer right. The movie was a space oper right out of the 1930's—but look a what the space operas of the 1930' *led* to.

Today we have *millions* of view ers willing to accept a world wit double suns, bizarre aliens that ar *not* meant to be merely frightening a vast Galactic Empire in whic Earth (if it exists) is too insignifi cant to be mentioned. Tomorrow these viewers will be ready fo *Dune* or *The City and the Stars* o *Way Station* or *The Left Hand o Darkness*.

How strange it seems that barel ten years ago James Blish sti warned against "incest"—the men tion of science fiction in a science fiction story, as if sf were a part o human culture, worthy of notic outside its (then) small readership Science fiction *is* part of our cultur now. Very flattering—but also a b unsettling for those who take seri ously both science fiction and it impact on human consciousness.

Be that as it may, the Golde Age of science fiction is here—an GALAXY intends to be part of i as much a part as a new but deter mined editor can make it. —j.j.p

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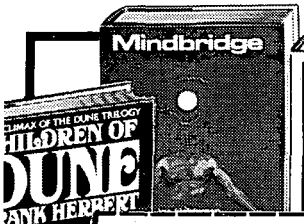

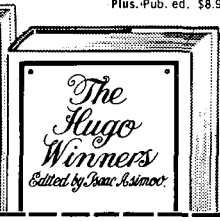

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